

GIV\_NBC\_0319521

**Table 1. Soil Sample Summary for Clifton Dioxin Containment Cell**  
**October 28, 2009 Sampling Event**

Boring	Sample ID	Sample Depth (ft bgs)	Total Depth	Comments
1	SB1-5	5	12	1st attempt Refusal at 5.5' bgs / 2nd attempt 12' bgs / Silty Sand - Dark Reddish Brown
1	SB1-12	12	12	Silty Sand - Dark Reddish Brown
2	SB2-6	6	12	Gravelly Sand - Dark Reddish Brown
2	SB2-12	12	12	Silty Sand - Dark Reddish Brown
3	SB3-8	8	10	Silty Sand - Dark Reddish Brown
3	SB3-10	10	10	Silty Sand - Dark Reddish Brown
4	SB4-6	6	10	Silty Sand - Dark Reddish Brown
4	SB4-10	10	10	Medium to Coarse Sand - Dark Reddish Brown
5	SB5-5	5	5.5	Refusal at 5.5' bgs / Silty Sand - Dark Reddish Brown
6	SB6-6	6	14	Silty Sand - Dark Reddish Brown
6	SB6-10	10	14	Silty Sand - Dark Reddish Brown
6	SB6-14	14	14	Silty Sand - Dark Reddish Brown
7	SB7-6	6	14	Foam Extruding from borehole / Silty Sand - Dark Reddish Brown
7	SB7-10	10	14	Silty Sand - Dark Reddish Brown
7	SB7-14	14	14	Silty Sand - Dark Reddish Brown
8	SB8-8	8	12	Color change to Dark Gray at 5'bgs / Silty Sand - Dark Gray
8	SB8-12	12	12	Silty Sand - Very Dark Gray
9	SB9-8	8	12	Fabric observed in core / Silty Sand - Dark Reddish Brown
9	SB9-12	12	12	Silty Sand - Dark Reddish Brown
10	SB10-8	8	12	Silty Sand - Dark Reddish Brown
10	SB10-12	12	12	Silty Sand - Dark Reddish Brown
11	SB11-10	10	10	No recovery from 4-8' bgs / Silty Sand - Dark Reddish Brown
12	SB12-10	10	12	Silty Sand - Dark Gray
12	SB12-12	12	12	Silty Sand - Dark Gray
13	SB13-8	8	14	Piece of metal fence observed in core / Silty Sand - Dark Reddish Brown
13	SB13-12	12	14	Silty Sand - Dark Reddish Brown
13	SB13-14	14	14	Silty Sand - Dark Reddish Brown

bgs - below existing ground surface

Light blue-shaded cells indicate samples analyzed from outside of "> 20 ppb" area

Dark blue-shaded cells indicate samples analyzed from within the ">20 ppb" area

# **PCDF Laboratory Report P2081**

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**APPENDIX A**

**ANALYTICAL PERSPECTIVES**

2 April 2010

Rob Barrick  
 Entrix, Inc.  
 200 First Ave W. Suite 200  
 Seattle, WA 98119

Telephone: 206.779.5339  
 Email: [rbarrick@entrix.com](mailto:rbarrick@entrix.com)

**Subject:** Certificate of Results

Dear Rob;

Attached to this narrative are the analytical results you requested on the samples submitted for the determination of polychlorinated dibenzo-*p*-dioxins and dibenzofurans. The insert below summarizes the relevant information pertaining to your project. In particular, QC annotations bring to your attention specific analytical observations and assessments made during the sample handling and data interpretation phases. A brief description of the report's components is provided. Results reported relate only to the items tested.

Project Information Summary		When applicable, see QC Annotations for details
<b>Client Project No.</b>		Givaudan
<b>AP Project No.</b>		P2081
<b>Analytical Protocol</b>		Method 1613B
<b>No. Samples Submitted</b>	4	
<b>No. Samples Analyzed</b>	4 (other samples on hold)	
<b>No. Laboratory Method Blanks</b>	1	
<b>No. OPRs / Batch CS3</b>	1	
<b>No. Outstanding Samples</b>	none	
<b>Date Received</b>	30-Oct-2009	
<b>Condition Received</b>	good	
<b>Temperature upon Receipt (C)</b>	2	
<b>Extraction within Holding Time</b>	yes	
<b>Analysis within Holding Time</b>	yes	
<b>Data meet QA/QC Requirements</b>	yes	
<b>Exceptions</b>	none	
<b>Analytical Difficulties</b>	none	

2714 EXCHANGE DRIVE  
 WILMINGTON, NC 28405  
 PH.: 910-794-1613

**ANALYTICAL PERSPECTIVES****QC Annotations:**

1. See Appendices for a description of data qualifiers/attributes/identifiers.

Analytical Perspectives remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, do not hesitate to contact us. Thank you for choosing Analytical Perspectives as part of your analytical support team.

Sincerely,



Kimberly Mace, Ph.D.  
Project Manager

2714 EXCHANGE DRIVE  
WILMINGTON, NC 28405  
PH.: 910-794-1613

**ANALYTICAL PERSPECTIVES****APPENDIX A: DATA QUALIFIERS / DATA ATTRIBUTES**

<b>*</b>	The reported concentration exceeds the calibration range (upper point of the calibration curve). <sup>1</sup>
<b>&gt;</b>	Indicates high recoveries. Shown with the numeric value at the top of the range. <sup>1</sup>
<b>B</b>	The analyte is found in the method blank, at a level that is <=10x the sample concentration.
<b>C</b>	Two or more congeners co-elute. In EDDs C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
<b>E</b>	The reported concentration exceeds the calibration range (upper point of the calibration curve).
<b>EMPC</b>	Represents an Estimated Maximum Possible Concentration. EMPC's arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), where there is a co-eluting interference, or where a single ion is utilized for quantitation due to PFK interference.
<b>ETH</b>	Indicates the presence of a diphenyl ether that appears to interfere with the quantitation of a furan. The reported concentration is the maximum.
<b>H/h</b>	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned. <sup>1</sup>
<b>J</b>	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve).
<b>ND</b>	Indicates a non-detect.
<b>NR</b>	Indicates a value that is not reportable.
<b>PR</b>	Due to interference, the associated congener is poorly resolved.
<b>QI</b>	Indicates the presence of a quantitative interference.
<b>Ra</b>	The new ratio -- [Ra] -- for 2,3,7,8-TCDD following the <sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD correction is shown between squared brackets in the DL column. <sup>1</sup>
<b>SI</b>	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates. <sup>1</sup>
<b>U</b>	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
<b>V</b>	The labeled standard recovery was found to be outside of the method control limits.
<b>X</b>	Indicates results reported from reinjection, refractionation, or repeat analyses.

**APPENDIX B: LAB ID IDENTIFIERS**

<b>AR</b>	Indicates use of the archived portion of the sample extract.
<b>CU</b>	Indicates a sample that required additional clean-up prior to MS injection/processing.
<b>D</b>	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
<b>DE</b>	Indicates a dilution performed with the addition of ES (extraction standard) solution.
<b>DUP</b>	Designation for a duplicate sample.
<b>MS</b>	Designation for a matrix spike.
<b>MSD</b>	Designation for a matrix spike duplicate.
<b>RJ</b>	Indicates a reinjection of the sample extract.
<b>S</b>	Indicates a sample split. The number that follows the "S" indicates the split factor.

<sup>1</sup>Denotes data qualifiers/attributes whose use will be phased out over time

**P2081 - TEQ**  
**Project ID: General Analytical HRMS**

<b>Sample Summary</b> <b>Part 1 (dry weight)</b>		<b>Method 1613</b>			
<b>Analyte</b>	<b>0_7636_MB001</b>	<b>SB7-10</b>	<b>SB13-14</b>	<b>SB2-12</b>	<b>SB10-12</b>
	pg/g	pg/g	pg/g	pg/g	pg/g
2,3,7,8-TCDD	(0.1)	777	3050	7410	7230
1,2,3,7,8-PeCDD	(0.0878)	75.5	694	2530	2210
1,2,3,4,7,8-HxCDD	(0.148)	31	371	1430	1340
1,2,3,6,7,8-HxCDD	(0.142)	52.5	451	1450	1560
1,2,3,7,8,9-HxCDD	(0.162)	[39.7]	[342]	1030	827
1,2,3,4,6,7,8-HpCDD	(0.141)	110	1030	4070	4960
OCDD	(0.344)	501	1320	4030	4290
2,3,7,8-TCDF	(0.0722)	20	39.3	123	68.4
1,2,3,7,8-PeCDF	(0.0722)	3.59	17.2	75	43
2,3,4,7,8-PeCDF	(0.0725)	(0.327)	(0.678)	193	106
1,2,3,4,7,8-HxCDF	(0.0943)	6.87	34.5	160	114
1,2,3,6,7,8-HxCDF	(0.0837)	6.09	21.9	145	83.4
2,3,4,6,7,8-HxCDF	(0.0961)	(0.173)	105	304	112
1,2,3,7,8,9-HxCDF	(0.134)	(0.238)	(0.636)	(0.69)	(0.79)
1,2,3,4,6,7,8-HpCDF	(0.108)	32.1	130	707	455
1,2,3,4,7,8,9-HpCDF	(0.164)	2.56	13.5	54.9	33.8
OCDF	(0.251)	50.8	129	370	182
ITEF TEQ (ND=0; EMPC=0)	<b>0.00</b>	<b>829</b>	<b>3,520</b>	<b>9,290</b>	<b>8,860</b>
ITEF TEQ (ND=0; EMPC=EMPC)	<b>0.00</b>	<b>833</b>	<b>3,550</b>	<b>9,290</b>	<b>8,860</b>
ITEF TEQ (ND=DL/2; EMPC=0)	<b>0.141</b>	<b>829</b>	<b>3,520</b>	<b>9,290</b>	<b>8,860</b>
ITEF TEQ (ND=DL/2; EMPC=EMPC)	<b>0.141</b>	<b>833</b>	<b>3,550</b>	<b>9,290</b>	<b>8,860</b>
ITEF TEQ (ND=DL; EMPC=EMPC)	<b>0.282</b>	<b>833</b>	<b>3,550</b>	<b>9,290</b>	<b>8,860</b>
Checkcode	315-806	191-718	283-168	518-916	101-554
Lab ID	MB1_7636_DF_SDS	P2081_7636_001	P2081_7636_002	P2081_7636_003	P2081_7636_004

( ) = DL

[ ] = EMPC

GIV\_NBC\_0319527

**P2081 - TEQ**  
**Project ID: General Analytical HRMS**

<b>Sample Summary</b> <b>Part 1 (wet weight)</b>		<b>ANALYTICAL PERSPECTIVES</b>				<b>Method 1613</b>	
<b>Analyte</b>	<b>0_7636_MB001</b>	<b>SB7-10</b>	<b>SB13-14</b>	<b>SB2-12</b>	<b>SB10-12</b>		
	pg/g	pg/g	pg/g	pg/g	pg/g		
2,3,7,8-TCDD	(0.1)	688	2680	6530	6300		
1,2,3,7,8-PeCDD	(0.0878)	66.8	609	2230	1920		
1,2,3,4,7,8-HxCDD	(0.148)	27.4	326	1260	1170		
1,2,3,6,7,8-HxCDD	(0.142)	46.5	396	1280	1360		
1,2,3,7,8,9-HxCDD	(0.162)	[35.1]	[300]	907	720		
1,2,3,4,6,7,8-HpCDD	(0.141)	97.4	904	3590	4320		
OCDD	(0.344)	443	1160	3550	3740		
2,3,7,8-TCDF	(0.0722)	17.7	34.5	108	59.6		
1,2,3,7,8-PeCDF	(0.0722)	3.18	15.1	66.1	37.5		
2,3,4,7,8-PeCDF	(0.0725)	(0.327)	(0.678)	170	92.3		
1,2,3,4,7,8-HxCDF	(0.0943)	6.08	30.3	141	99.3		
1,2,3,6,7,8-HxCDF	(0.0837)	5.39	19.2	128	72.6		
2,3,4,6,7,8-HxCDF	(0.0961)	(0.173)	92.2	268	97.6		
1,2,3,7,8,9-HxCDF	(0.134)	(0.238)	(0.636)	(0.69)	(0.79)		
1,2,3,4,6,7,8-HpCDF	(0.108)	28.4	114	623	396		
1,2,3,4,7,8,9-HpCDF	(0.164)	2.27	11.9	48.4	29.4		
OCDF	(0.251)	45	113	326	159		
ITEF TEQ (ND=0; EMPC=0)	0.00	734	3,090	8,180	7,720		
ITEF TEQ (ND=0; EMPC=EMPC)	0.00	737	3,120	8,180	7,720		
ITEF TEQ (ND=DL/2; EMPC=0)	0.141	734	3,090	8,180	7,720		
ITEF TEQ (ND=DL/2; EMPC=EMPC)	0.141	737	3,120	8,180	7,720		
ITEF TEQ (ND=DL; EMPC=EMPC)	0.282	737	3,120	8,180	7,720		
Checkcode	315-806	191-718	283-168	518-916	101-554		
Lab ID	MB1_7636_DF_SDS	P2081_7636_001	P2081_7636_002	P2081_7636_003	P2081_7636_004		

( ) = DL

[ ] = EMPC

GIV\_NBC\_0319528

**P2081 - WHO-2005-TEQ**  
**Project ID: General Analytical HRMS**

<b>Sample Summary</b> <b>Part 1 (dry weight)</b>		<b>ANALYTICAL PERSPECTIVES</b>				<b>Method 1613</b>	
<b>Analyte</b>	<b>0_7636_MB001</b>	<b>SB7-10</b>	<b>SB13-14</b>	<b>SB2-12</b>	<b>SB10-12</b>		
	pg/g	pg/g	pg/g	pg/g	pg/g		
2,3,7,8-TCDD	(0.1)	777	3050	7410	7230		
1,2,3,7,8-PeCDD	(0.0878)	75.5	694	2530	2210		
1,2,3,4,7,8-HxCDD	(0.148)	31	371	1430	1340		
1,2,3,6,7,8-HxCDD	(0.142)	52.5	451	1450	1560		
1,2,3,7,8,9-HxCDD	(0.162)	[39.7]	[342]	1030	827		
1,2,3,4,6,7,8-HpCDD	(0.141)	110	1030	4070	4960		
OCDD	(0.344)	501	1320	4030	4290		
2,3,7,8-TCDF	(0.0722)	20	39.3	123	68.4		
1,2,3,7,8-PeCDF	(0.0722)	3.59	17.2	75	43		
2,3,4,7,8-PeCDF	(0.0725)	(0.327)	(0.678)	193	106		
1,2,3,4,7,8-HxCDF	(0.0943)	6.87	34.5	160	114		
1,2,3,6,7,8-HxCDF	(0.0837)	6.09	21.9	145	83.4		
2,3,4,6,7,8-HxCDF	(0.0961)	(0.173)	105	304	112		
1,2,3,7,8,9-HxCDF	(0.134)	(0.238)	(0.636)	(0.69)	(0.79)		
1,2,3,4,6,7,8-HpCDF	(0.108)	32.1	130	707	455		
1,2,3,4,7,8,9-HpCDF	(0.164)	2.56	13.5	54.9	33.8		
OCDF	(0.251)	50.8	129	370	182		
WHO-2005 TEQ (ND=0; EMPC=0)	<b>0.00</b>	<b>866</b>	<b>3,860</b>	<b>10,500</b>	<b>9,940</b>		
WHO-2005 TEQ (ND=0; EMPC=EMPC)	<b>0.00</b>	<b>870</b>	<b>3,890</b>	<b>10,500</b>	<b>9,940</b>		
WHO-2005 TEQ (ND=DL/2; EMPC=0)	<b>0.155</b>	<b>866</b>	<b>3,860</b>	<b>10,500</b>	<b>9,940</b>		
WHO-2005 TEQ (ND=DL/2; EMPC=EMPC)	<b>0.155</b>	<b>870</b>	<b>3,890</b>	<b>10,500</b>	<b>9,940</b>		
WHO-2005 TEQ (ND=DL; EMPC=EMPC)	<b>0.310</b>	<b>870</b>	<b>3,900</b>	<b>10,500</b>	<b>9,940</b>		
Checkcode	315-806	191-718	283-168	518-916	101-554		
Lab ID	MB1_7636_DF_SDS	P2081_7636_001	P2081_7636_002	P2081_7636_003	P2081_7636_004		

( ) = DL

[ ] = EMPC

GIV\_NBC\_0319529

**P2081 - Totals**  
**Project ID: General Analytical HRMS**

<b>Sample Summary</b> <b>Part 2 (dry weight)</b>		<b>Method 1613</b>			
Analyte	0_7636_MB001	SB7-10	SB13-14	SB2-12	SB10-12
	pg/g	pg/g	pg/g	pg/g	pg/g
<b>Totals</b>					
TCDDs	0	894	3660	9790	8400
PeCDDs	0	311	2720	8840	6260
HxCDDs	0	475	3800	12300	10000
HpCDDs	0	234	2080	7760	9080
OCDD	0	501	1320	4030	4290
TCDFs	0	610	1910	4420	1930
PeCDFs	0	1610	4850	7480	1880
HxCDFs	0	13900	17400	11500	3390
HpCDFs	0	86	303	1180	698
OCDF	0	50.8	129	370	182
Total PCDD/Fs (ND=0; EMPC=0)	0.00	18,700	38,200	67,700	46,100
Total PCDD/Fs (ND=0; EMPC=EMPC)	0.00	18,800	38,800	68,000	46,100
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)	2.27	18,800	38,800	68,000	46,100
Total 2378s (ND=0; EMPC=0)	0.00	1,670	7,410	24,100	23,600
Total 2378s (ND=0.5; EMPC=0)	1.14	1,670	7,410	24,100	23,600
Total 2378s (ND=1; EMPC=0)	2.27	1,670	7,410	24,100	23,600
Total 2378s (ND=0; EMPC=1)	0.00	3,380	15,200	48,100	47,200
Total 2378s (ND=0.5; EMPC=1)	1.14	1,710	7,750	24,100	23,600
Total 2378s (ND=1; EMPC=1)	2.27	1,710	7,750	24,100	23,600
Checkcode	315-806	191-718	283-168	518-916	101-554
Lab ID	MB1_7636_DF_SDS	P2081_7636_001	P2081_7636_002	P2081_7636_003	P2081_7636_004

( ) = DL

[ ] = EMPC

GIV\_NBC\_0319530

**P2081 - Totals**  
**Project ID: General Analytical HRMS**

<b>Sample Summary</b> <b>Part 2 (wet weight)</b>		<b>ANALYTICAL PERSPECTIVES</b>			
Analyte	0_7636_MB001	SB7-10	SB13-14	SB2-12	Method 1613
	pg/g	pg/g	pg/g	pg/g	pg/g
<b>Totals</b>					
TCDDs	0	791	3220	8630	7320
PeCDDs	0	275	2390	7790	5450
HxCDDs	0	420	3330	10800	8710
HpCDDs	0	207	1820	6840	7910
OCDD	0	443	1160	3550	3740
TCDFs	0	540	1670	3900	1680
PeCDFs	0	1430	4260	6590	1640
HxCDFs	0	12300	15300	10200	2950
HpCDFs	0	76.1	266	1040	608
OCDF	0	45	113	326	159
Total PCDD/Fs (ND=0; EMPC=0)	0.00	16,600	33,500	59,600	40,200
Total PCDD/Fs (ND=0; EMPC=EMPC)	0.00	16,600	34,000	59,900	40,200
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)	2.27	16,600	34,000	59,900	40,200
Total 2378s (ND=0; EMPC=0)	0.00	1,480	6,500	21,200	20,600
Total 2378s (ND=0.5; EMPC=0)	1.14	1,480	6,500	21,200	20,600
Total 2378s (ND=1; EMPC=0)	2.27	1,480	6,510	21,200	20,600
Total 2378s (ND=0; EMPC=1)	0.00	2,990	13,300	42,400	41,100
Total 2378s (ND=0.5; EMPC=1)	1.14	1,510	6,800	21,200	20,600
Total 2378s (ND=1; EMPC=1)	2.27	1,510	6,800	21,200	20,600
Checkcode	315-806	191-718	283-168	518-916	101-554
Lab ID	MB1_7636_DF_SDS	P2081_7636_001	P2081_7636_002	P2081_7636_003	P2081_7636_004

( ) = DL

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GIV\_NBC\_0319531

**P2081 - Others**  
**Project ID: General Analytical HRMS**

<b>Sample Summary</b> <b>Part 3 (dry weight)</b>		<b>ANALYTICAL PERSPECTIVES</b>			
<b>Analyte</b>	<b>0_7636_MB001</b>	<b>SB7-10</b>	<b>SB13-14</b>	<b>SB2-12</b>	<b>SB10-12</b>
	pg/g	pg/g	pg/g	pg/g	pg/g
<b>Other PCDD/Fs (ND=0, EMPC=0)</b>					
Other TCDD	0	116	610	2380	1170
Other PeCDD	0	235	2030	6310	4050
Other HxCDD	0	391	2980	8360	6280
Other HpCDD	0	124	1050	3690	4120
Other TCDF	0	590	1870	4300	1860
Other PeCDF	0	1600	4780	7210	1730
Other HxCDF	0	13800	17300	10900	3060
Other HpCDF	0	51.3	159	420	210
<b>Other PCDD/Fs (ND=0, EMPC=EMPC)</b>					
Other TCDD	0	119	616	2400	1190
Other PeCDD	0	235	2030	6310	4050
Other HxCDD	0	406	3140	8510	6280
Other HpCDD	0	124	1050	3690	4120
Other TCDF	0	610	1870	4470	1870
Other PeCDF	0	1610	4820	7210	1730
Other HxCDF	0	13800	17300	10900	3060
Other HpCDF	0	51.3	159	420	210
Checkcode Lab ID	315-806 MB1_7636_DF_SDS	191-718 P2081_7636_001	283-168 P2081_7636_002	518-916 P2081_7636_003	101-554 P2081_7636_004

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**P2081 - DLs**  
**Project ID: General Analytical HRMS**

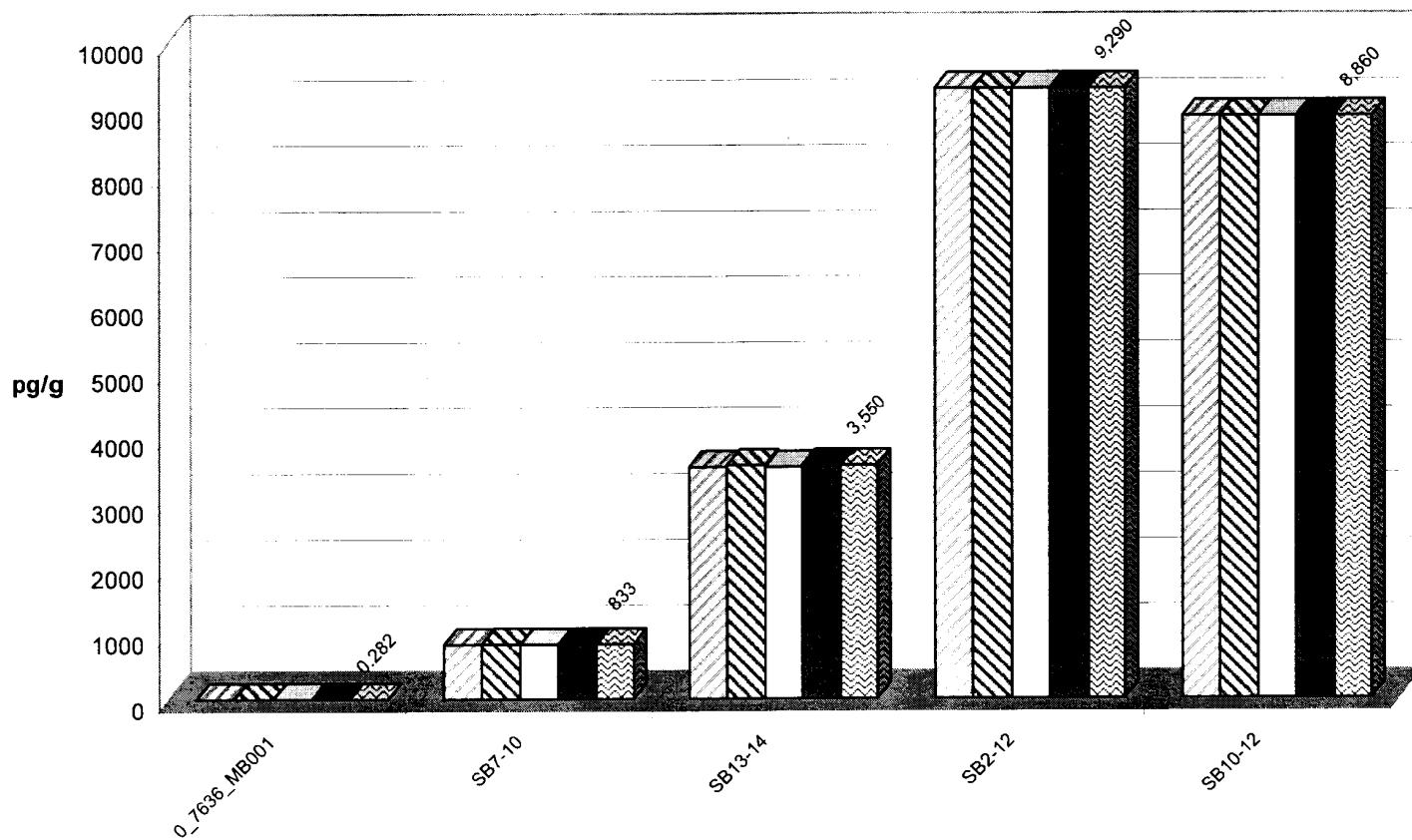
<b>Sample Summary</b> <b>Part 5 (dry weight)</b>		<b>ANALYTICAL PERSPECTIVES</b>				<b>Method 1613</b>	
<b>Analyte</b>	<b>0_7636_MB001</b>	<b>SB7-10</b>	<b>SB13-14</b>	<b>SB2-12</b>	<b>SB10-12</b>		
	pg/g	pg/g	pg/g	pg/g	pg/g		
2,3,7,8-TCDD	0.1	0.102	0.235	0.314	0.478		
1,2,3,7,8-PeCDD	0.0878	0.17	0.386	1.08	1.22		
1,2,3,4,7,8-HxCDD	0.148	0.17	0.35	1.54	3.23		
1,2,3,6,7,8-HxCDD	0.142	0.17	0.355	1.69	3.1		
1,2,3,7,8,9-HxCDD	0.162	0.186	0.43	1.97	3.81		
1,2,3,4,6,7,8-HpCDD	0.141	0.154	0.142	0.181	0.315		
OCDD	0.344	0.319	0.342	0.264	0.267		
2,3,7,8-TCDF	0.0722	0.143	0.189	0.569	0.263		
1,2,3,7,8-PeCDF	0.0722	0.37	0.702	0.793	0.532		
2,3,4,7,8-PeCDF	0.0725	0.327	0.678	0.763	0.512		
1,2,3,4,7,8-HxCDF	0.0943	0.164	0.474	0.878	0.734		
1,2,3,6,7,8-HxCDF	0.0837	0.156	0.438	0.845	0.732		
2,3,4,6,7,8-HxCDF	0.0961	0.173	0.51	1.04	0.779		
1,2,3,7,8,9-HxCDF	0.134	0.238	0.636	0.69	0.79		
1,2,3,4,6,7,8-HpCDF	0.108	0.111	0.101	0.19	0.0773		
1,2,3,4,7,8,9-HpCDF	0.164	0.159	0.151	0.267	0.1		
OCDF	0.251	0.213	0.23	0.259	0.205		
Total TCDD	0.1	0.102	0.235	0.314	0.478		
Total PeCDD	0.0878	0.17	0.386	1.08	1.22		
Total HxCDD	0.15	0.175	0.378	1.73	3.37		
Total HpCDD	0.141	0.154	0.142	0.181	0.315		
Total TCDF	0.0722	0.143	0.189	0.569	0.263		
Total PeCDF	0.0724	0.348	0.69	0.778	0.522		
Total HxCDF	0.0996	0.179	0.519	0.812	0.76		
Total HpCDF	0.132	0.133	0.123	0.226	0.0882		
Checkcode	315-806	191-718	283-168	518-916	101-554		
Lab ID	MB1_7636_DF_SDS	P2081_7636_001	P2081_7636_002	P2081_7636_003	P2081_7636_004		

GIV\_NBC\_0319533

# ITEF-TEQ

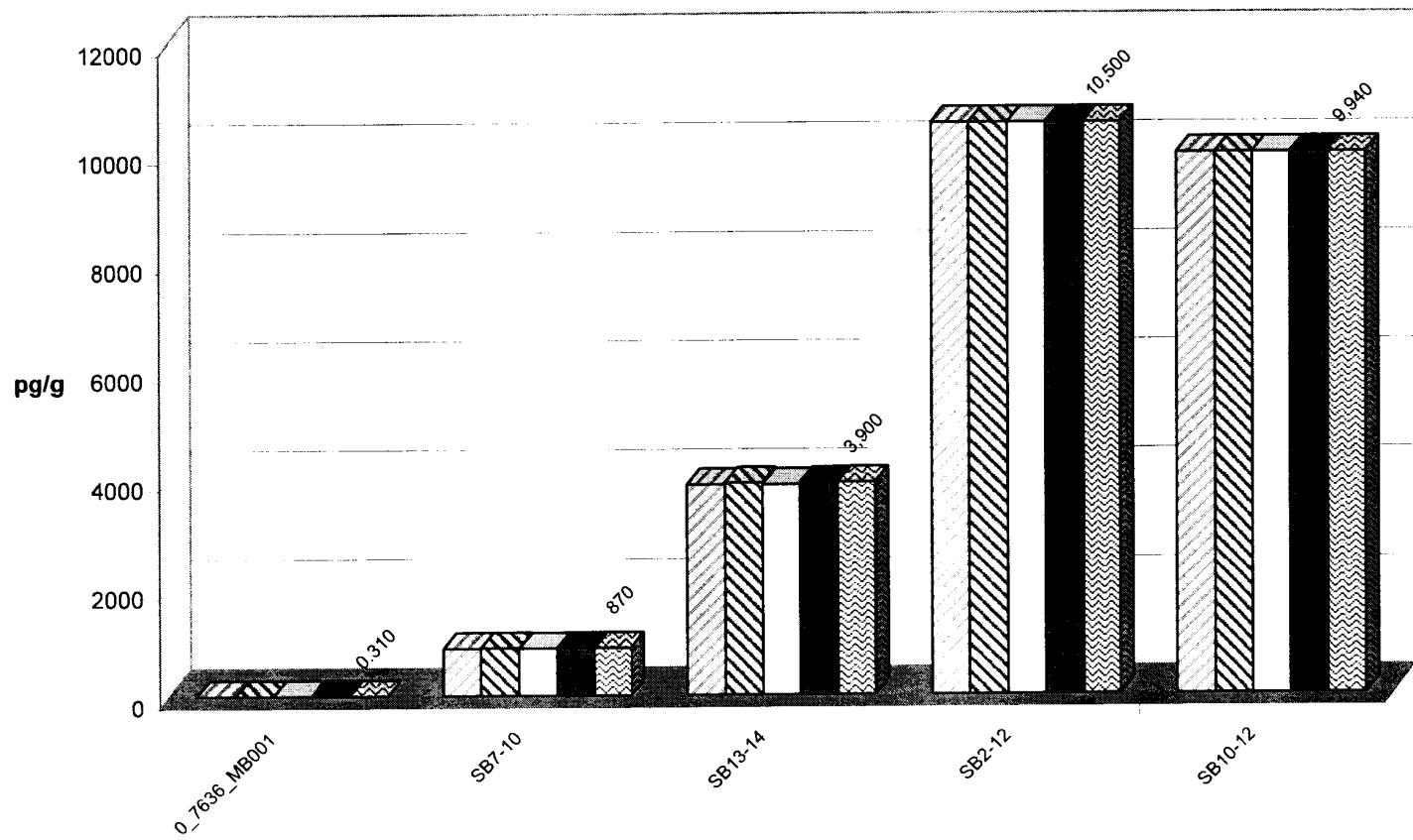
Project ID: General Analytical HRMS  
P2081

- ND=0; EMPC=0
- ▨ ND=0; EMPC=EMPC
- ND=DL/2; EMPC=0
- ND=DL/2; EMPC=EMPC
- ▨ ND=DL; EMPC=EMPC



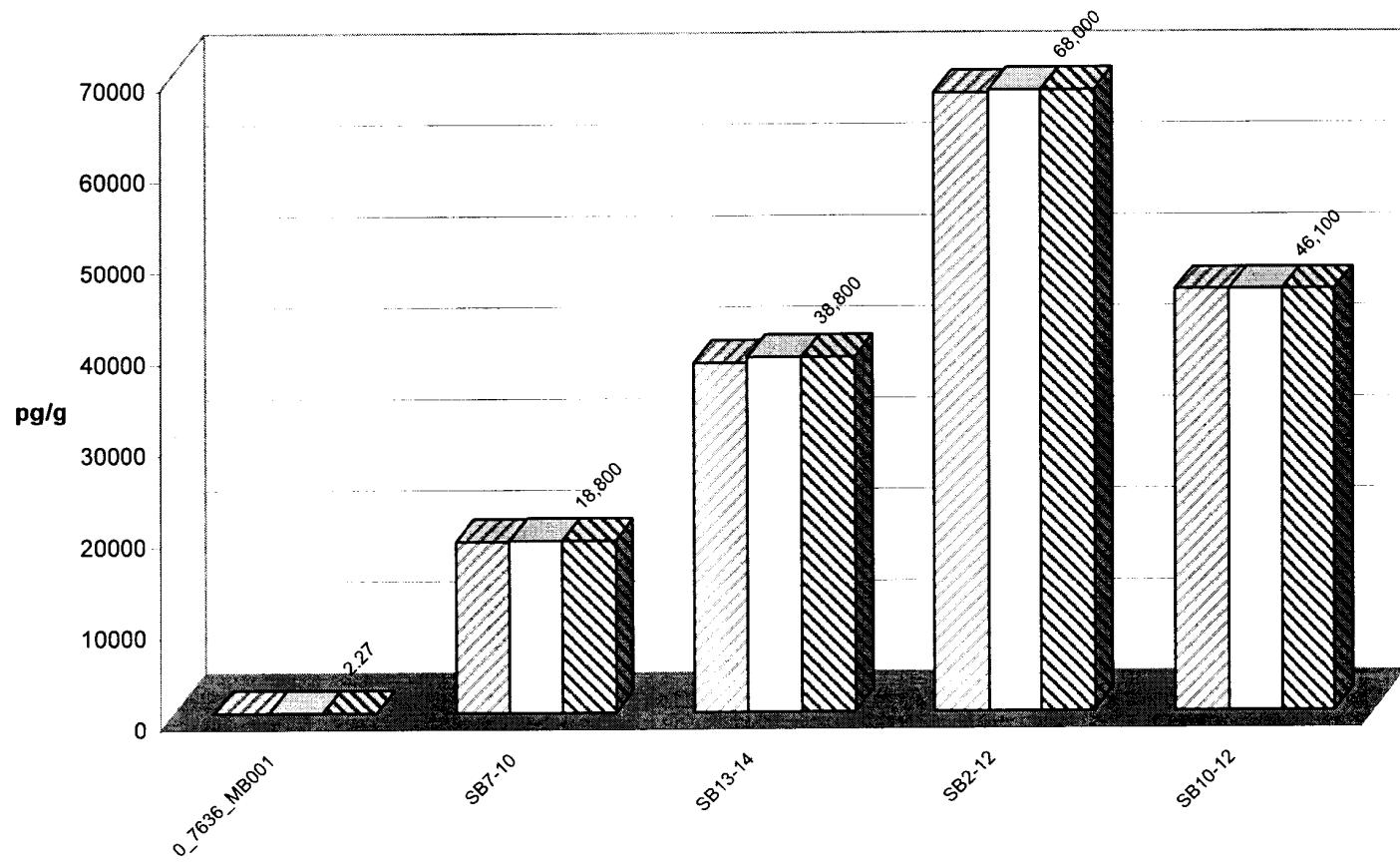
**WHO-2005-TEQ**  
Project ID: General Analytical HRMS  
P2081

- ND=0; EMPC=0
- ▨ ND=0; EMPC=EMPC
- ND=DL/2; EMPC=0
- ND=DL/2; EMPC=EMPC
- ▨ ND=DL; EMPC=EMPC



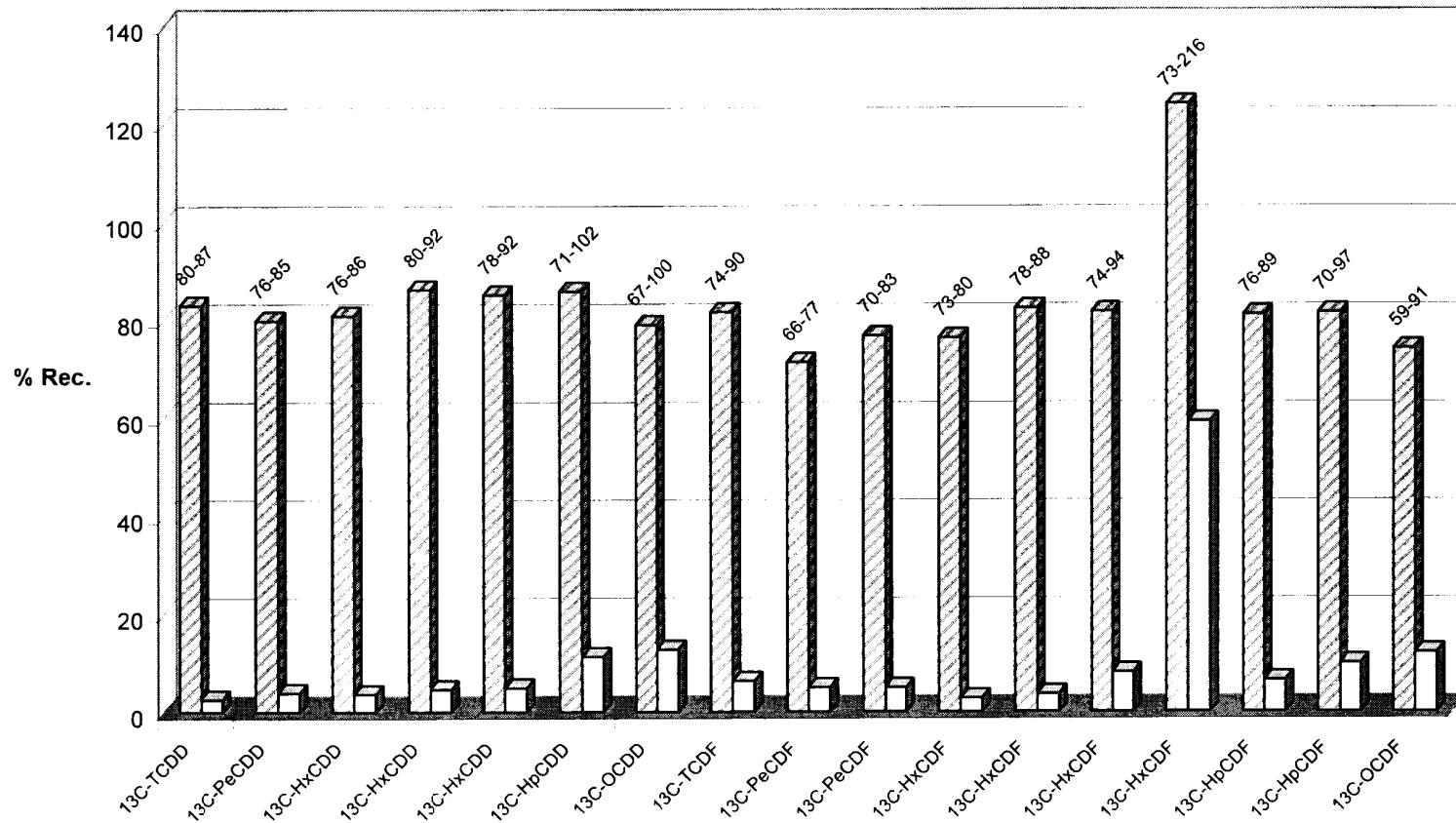
**Totals**  
Project ID: General Analytical HR  
P2081

- Total PCDD/Fs (ND=0; EMPC=0)
- Total PCDD/Fs (ND=0; EMPC=EMPC)
- Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)



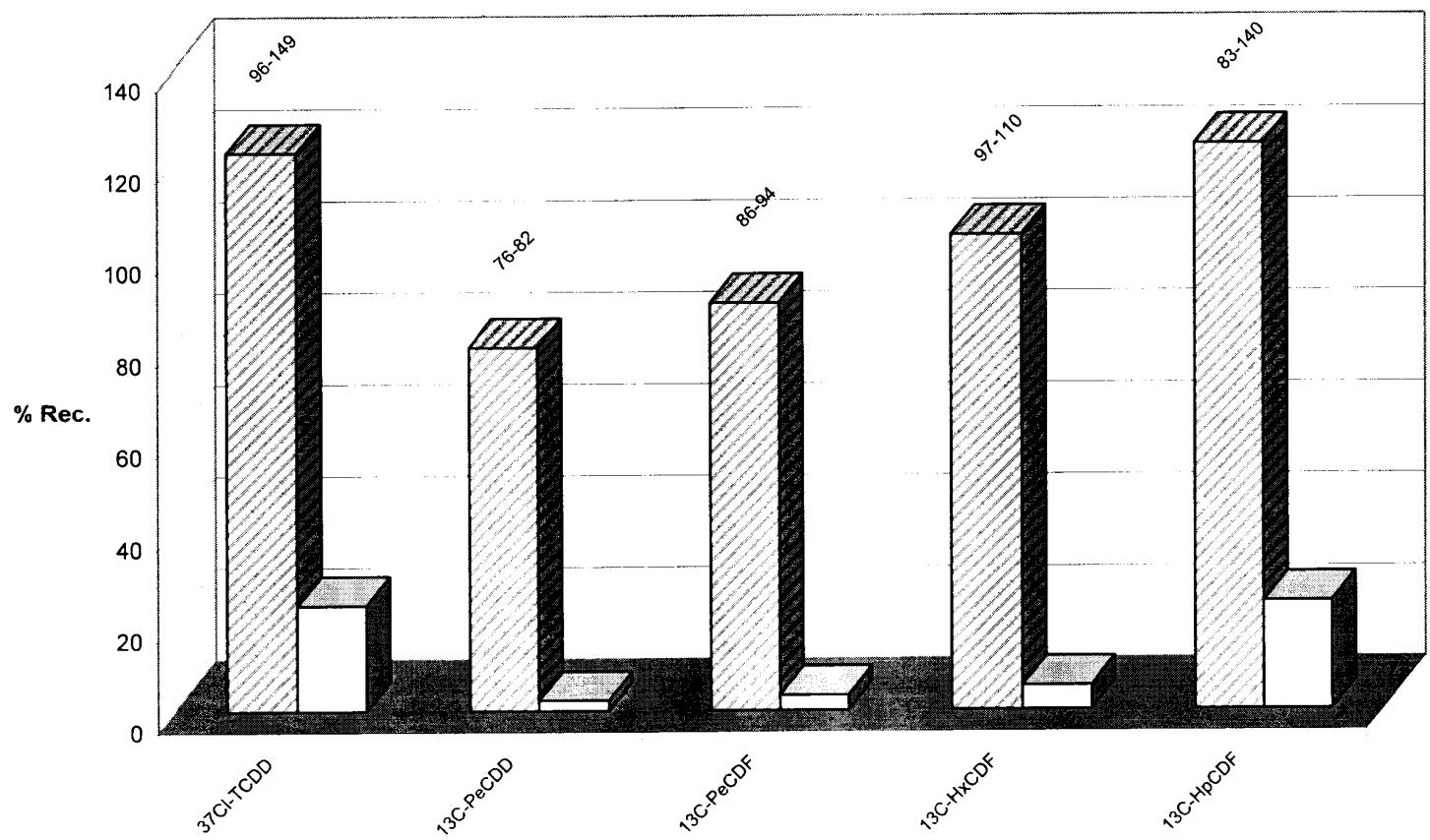
**Mean Recoveries of Extraction Standards (N=5)**  
**Project ID: General Analytical HRMS**  
**P2081**

□ Mean □ Std. Dev.



**Mean Recoveries of Clean-Up Standards (N=5)**  
**Project ID: General Analytical HRMS**  
**P2081**

Mean Std. Dev.



### **ANALYTICAL PREDICTION**

• 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100%

• 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100%

### **ANALYTICAL PREDICTION \***

• 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100%

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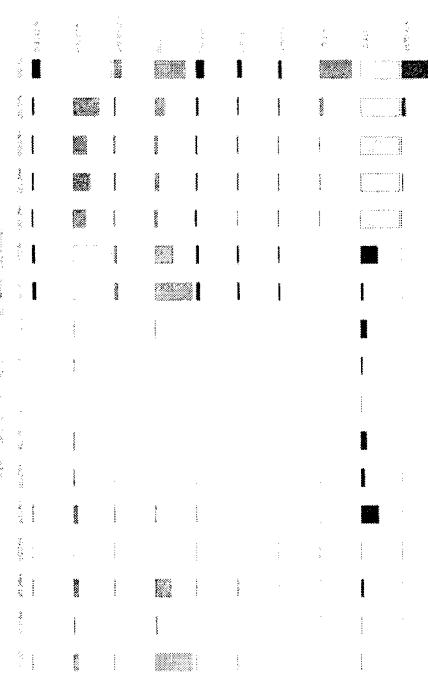
• 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100%

### **ANALYTICAL PREDICTION**

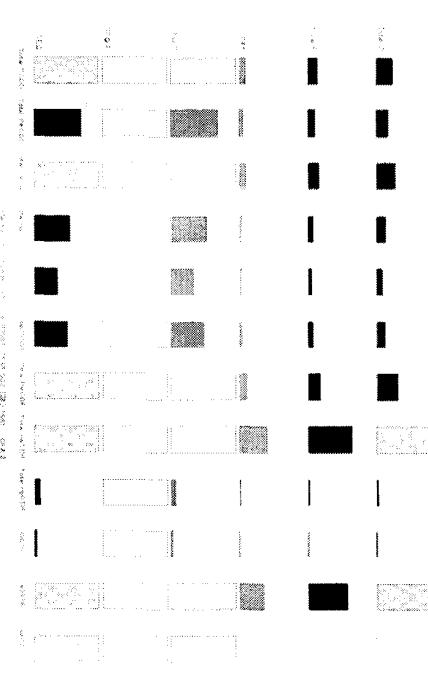
• 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100%

• 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100% - 100%

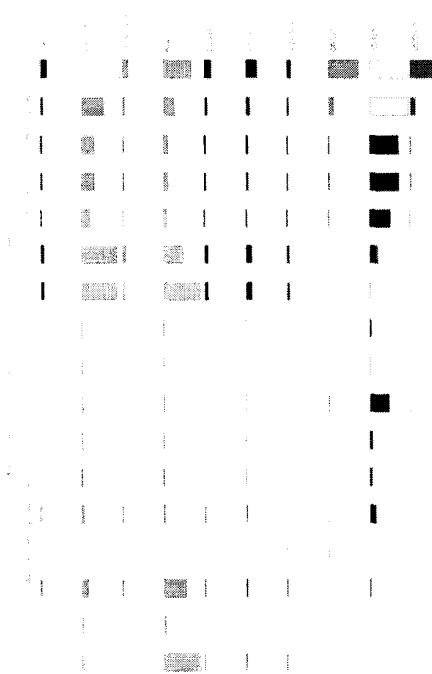
### ANALYTICAL PERSPECTIVES



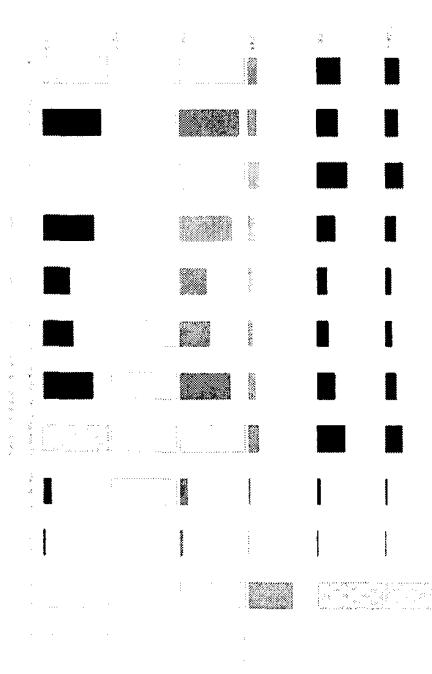
### ANALYTICAL PERSPECTIVES

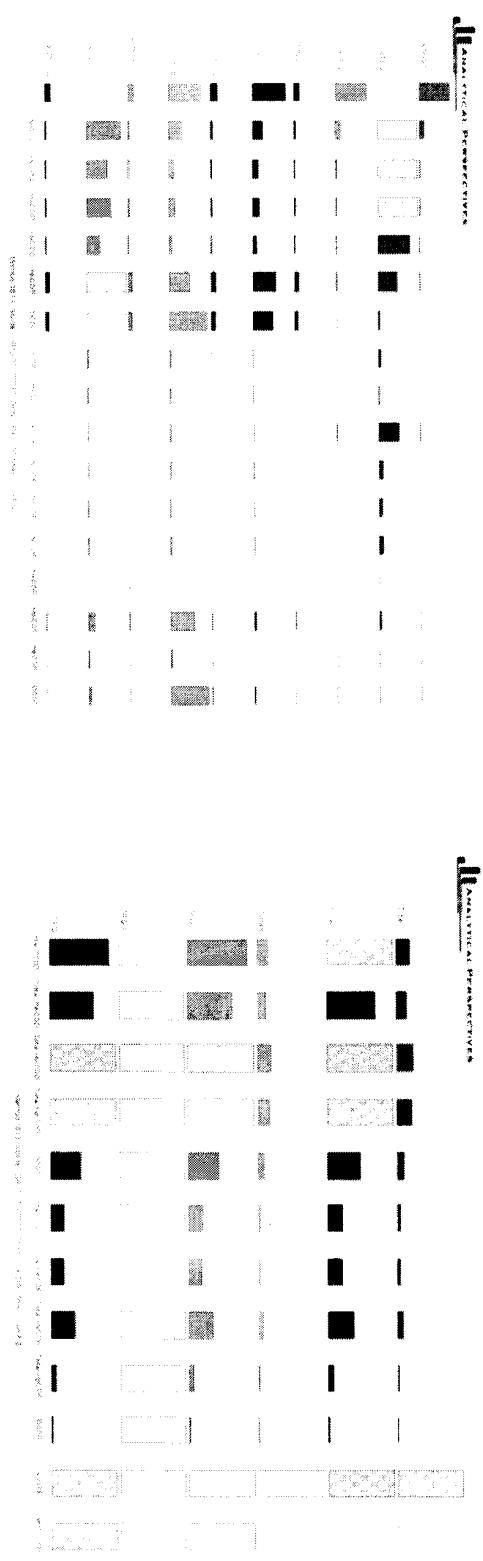


### ANALYTICAL PERSPECTIVES



### ANALYTICAL PERSPECTIVES





**Sample ID: 0\_7636\_OPR001****Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	ENTRIX INC	Matrix:	Solids	Lab Project ID:	P2081	Date Received:	n/a
Project ID:	General Analytical HRMS	Weight/Volume:	1.00 g	Lab Sample ID	OPR1_7636_DF	Date Extracted:	19 Mar 2010
Date Collected:	n/a	% Solids:	n/a	QC Batch No:	7636	Date Analyzed:	25 Mar 2010
		Split:	-	Dilution:	-	Time Analyzed:	17:27:04
Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	188	[Ra=0.77]			ES 2378-TCDD	80	
12378-PeCDD	908				ES 12378-PeCDD	87.7	
123478-HxCDD	964				ES 123478-HxCDD	92.1	
123678-HxCDD	973				ES 123678-HxCDD	95.7	
123789-HxCDD	861				ES 123789-HxCDD	94.8	
1234678-HpCDD	994				ES 1234678-HpCDD	75.7	
OCDD	1950				ES OCDD	72.7	
2378-TCDF	213				ES 2378-TCDF	68	
12378-PeCDF	885				ES 12378-PeCDF	87.2	
23478-PeCDF	947				ES 23478-PeCDF	89.9	
123478-HxCDF	888				ES 123478-HxCDF	86.7	
123678-HxCDF	894				ES 123678-HxCDF	102	
234678-HxCDF	945				ES 234678-HxCDF	94.2	
123789-HxCDF	928				ES 123789-HxCDF	80.7	
1234678-HpCDF	926				ES 1234678-HpCDF	83.6	
1234789-HpCDF	893				ES 1234789-HpCDF	75.4	
OCDF	1910				ES OCDF	74.3	
<b>Totals</b>					Standard	CS/AS Recoveries	
Total TCDD	841		841		CS 37CI-2378-TCDD	88	
Total PeCDD	1370		1370		CS 12347-PeCDD	83.1	
Total HxCDD	3070		3070		CS 12346-PeCDF	92.2	
Total HpCDD	1260		1260		CS 123469-HxCDF	104	
Total TCDF	1040		1040		CS 1234689-HpCDF	88.9	
Total PeCDF	2190		2200		AS 1368-TCDD	n/a	
Total HxCDF	5780		5780		AS 1368-TCDF	n/a	
Total HpCDF	1820		1820				
<b>Total PCDD/Fs</b>	<b>21200</b>		<b>21200</b>				
<b>ITEF TEQs</b>					2714 Exchange Drive		
TEQ: ND=0	1860		1860		ANALYTICAL PERSPECTIVES Wilmington, NC 28405 , USA		
TEQ: ND=DL/2	1860		1860		info@ultratrace.com		
TEQ: ND=DL	1860		1860		Tel: +1 910 794-1613 (Fax: -3919); Toll-Free 866 846-8299 www.ultratrace.com		

**Sample ID: 0\_7636\_OPR001**
**Method 1613**

<b>Client Data</b>			<b>Sample Data</b>			<b>Laboratory Data</b>					
Name:	ENTRIX INC		Matrix:	Solids		Lab Project ID:	P2081	Date Received:	n/a		
Project ID:	General Analytical HRMS		Weight/Volume:	1.00 g	n/a	Lab Sample ID:	OPR1_7636_DF	Date Extracted:	19 Mar 2010		
Date Collected:	n/a		% Solids:	n/a	-	QC Batch No.:	7636	Date Analyzed:	25 Mar 2010		
			Split:	-		Dilution:	-	Time Analyzed:	17:27:04		
Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	143		12479/12468D	270		124679/124689D	271		1234679D	268	
1379D	(1.27)		12469D	(1.24)		123468D	(1.41)		1234678D	994	
1369D	(1.27)		12368D	(1.24)		123679/123689D	(1.41)				
1469D	(1.27)		12478D	(1.24)		123469D	(1.41)				
1247D...[4]	(1.27)		12379D	(1.24)		123478D	964				
1378D	(1.27)		12369D...[3]	(1.24)		123678D	973				
1268D	(1.27)		12346/12347D	[1.48]	J	123467D	(1.41)				
1478D	(1.27)		12378D	908		123789D	861		Conc.	1,260	
1279D	(1.27)		12367D	(1.24)					EMPC	1,260	
1234/1269D	(1.27)		12389D	196							
1236D	(1.27)								Octa-Dioxin	Conc	Qualifiers
1237/1238D	(1.27)									(pg/g)	
1239D	284								OCDD	1950	
2378D	188										
1278D	(1.27)										
1267D	(1.27)										
1289D	226										
Conc.	841		Conc.	1,370		Conc.	3,070				
EMPC	841		EMPC	1,370		EMPC	3,070				
 <b>ANALYTICAL PERSPECTIVES</b> Tel: +1 910 794-1613 Fax: +1 910 794-3919 info@ultratrace.com www.ultratrace.com											
2714 Exchange Drive Wilmington, NC 28405, USA											
Checkcode: 729-168											
Report Created: 26-Mar-2010 09:27 Analyst: MC											
136 Congener DF Summary Page 1 of 2											

**Sample ID: 0\_7636\_OPR001**
**Method 1613**

<b>Client Data</b>			<b>Sample Data</b>			<b>Laboratory Data</b>					
Name:	ENTRIX INC		Matrix:	Solids		Lab Project ID:	P2081		Date Received:	n/a	
Project ID:	General Analytical HRMS		Weight/Volume:	1.00 g		Lab Sample ID:	OPR1_7636_DF		Date Extracted:	19 Mar 2010	
Date Collected:	n/a		% Solids:	n/a		QC Batch No.:	7636		Date Analyzed:	25 Mar 2010	
Split:	-		Dilution:	-		Time Analyzed:	17:27:04				
Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	263		13468/12468F	154		123468F	2130		1234678F	926	
1468F	(1.43)		13678F...[3]	(0.92)		124678/134678F	(1.07)		1234679F	(1.28)	
2468F	83.1		12368F...[3]	24.3	J	134679F	(1.07)		1234689F	(1.28)	
1346/1246F	(1.43)		14678F	(0.92)		124679F	(1.07)		1234789F	893	
1347F...[3]	(1.43)		13479F	(0.92)		124689F	(1.07)				
1348F	(1.43)		13469/12479F	(0.92)		123467F	[1.64]	J			
1248F...[3]	(1.43)		12346F	(0.92)		123478F	888				
1268F	(1.43)		23468/12469F	[3.95]	J	123678F	894				
1467F	(1.43)		12347F	(0.92)		123479F	(1.07)				
1478F	(1.43)		12348F	(0.92)		123469F	(1.07)				
1369/1237F	(1.43)		12378F	885		123679F	(1.07)				
2467F	(1.43)		12678/12367F	18.8	J	234678F	945		Conc.	1,820	
2368F	(1.43)		12379F	(0.92)		234678/123689F	(1.03)		EMPC	1,820	
1238F...[5]	(1.43)		12679F	(0.92)		123689F	(1.07)				
1278F	(1.43)		23467/12369F	(0.92)		123789F	928		Octa-Furan	Conc	Qualifiers
1349F	(1.43)		23478F	947		123789/123489F	(1.5)			(pg/g)	
1267F	(1.43)		23478/12489F	(0.945)		123489F	(1.07)		OCDF	1910	
2346/1249F	(1.43)		12489F	(0.92)							
2347/1279F	(1.43)		12349F	(0.92)							
2348F	170		12389F	164							
2378F	213										
2367/3467F	(1.43)										
1269F	(1.43)										
1239F	(1.43)										
1289F	314										
<b>Conc.</b>	1,040		<b>Conc.</b>	2,190		<b>Conc.</b>	5,780				
<b>EMPC</b>	1,040		<b>EMPC</b>	2,200		<b>EMPC</b>	5,780				

Checkcode: 729-168

Report Created: 26-Mar-2010 09:27 Analyst: MC

**Sample ID: 0\_7636\_OPR001****TEQ Summary****Method 1613**

Client Project Name:	ENTRIX INC	Matrix:	Solids	Lab Sample ID:	OPR1_7636_DF	
Client Project ID:	General Analytical HRMS	Weight/Volume:	1.00 g	QC Batch No.:	7636	
Date Collected:	n/a	Split:	-	Date Extracted:	19 Mar 2010	
Date Received:	n/a	Dilution:	-	Date Analyzed:	25 Mar 2010 17:27	
Lab Project No:	P2081	Units	pg/g			
Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	188		1.27	188	188	188
12378-PeCDD	908		1.24	454	908	908
123478-HxCDD	964		1.34	96.4	96.4	96.4
123678-HxCDD	973		1.33	97.3	97.3	97.3
123789-HxCDD	861		1.57	86.1	86.1	86.1
1234678-HpCDD	994		1.87	9.94	9.94	9.94
OCDD	1950		3.14	1.95	0.195	0.586
2378-TCDF	213		1.43	21.3	21.3	21.3
12378-PeCDF	885		0.896	44.3	44.3	26.6
23478-PeCDF	947		0.945	473	473	284
123478-HxCDF	888		1.05	88.8	88.8	88.8
123678-HxCDF	894		0.836	89.4	89.4	89.4
234678-HxCDF	945		1.03	94.5	94.5	94.5
123789-HxCDF	928		1.5	92.8	92.8	92.8
1234678-HpCDF	926		1.03	9.26	9.26	9.26
1234789-HpCDF	893		1.6	8.93	8.93	8.93
OCDF	1910		2.93	1.91	0.191	0.573
ANALYTICAL PERSPECTIVES		TEQ Summaries				
2714 Exchange Drive Wilmington, NC 28405, USA Tel: +1 910 794-1613; Toll-Free 866 846-8290 Fax: +1 910 794-3919 info@ultratrace.com www.ultratrace.com		EMPC = 0, ND = 0	1860	2310	2100	
		EMPC = 0, ND = DL / 2	1860	2310	2100	
		EMPC = 0, ND = DL	1860	2310	2100	
		EMPC = 0, < J-level = 0	1860	2310	2100	
		EMPC = EMPC, ND = 0	1860	2310	2100	
		EMPC = EMPC, ND = DL / 2	1860	2310	2100	
		EMPC = EMPC, ND = DL	1860	2310	2100	
		EMPC = EMPC, < J-level = 0	1860	2310	2100	

Checkcode: 729-168

AP D/F 2010 Rev. L

GIV\_NBC\_0319545

**Sample ID: 0\_7636\_MB001****Method 1613**

<u><b>Client Data</b></u>		<u><b>Sample Data</b></u>		<u><b>Laboratory Data</b></u>			
Name:	ENTRIX INC	Matrix:	Solids	Lab Project ID:	P2081	Date Received:	n/a
Project ID:	General Analytical HRMS	Weight/Volume:	10.00 g	Lab Sample ID	MB1_7636_DF_SDS	Date Extracted:	19 Mar 2010
Date Collected:	n/a	% Solids:	n/a	QC Batch No:	7636	Date Analyzed:	25 Mar 2010
		Split:	-	Dilution:	-	Time Analyzed:	19:08:01
<b>Analyte</b>	<b>Conc. (pg/g)</b>	<b>DL (pg/g)</b>	<b>EMPC (pg/g)</b>	<b>Qualifiers</b>	<b>Standard</b>	<b>ES Recoveries</b>	<b>Qualifiers</b>
2378-TCDD	ND	0.1			ES 2378-TCDD	87.1	
12378-PeCDD	ND	0.0878			ES 12378-PeCDD	83.1	
123478-HxCDD	ND	0.148			ES 123478-HxCDD	81	
123678-HxCDD	ND	0.142			ES 123678-HxCDD	87.8	
123789-HxCDD	ND	0.162			ES 123789-HxCDD	83.3	
1234678-HpCDD	ND	0.141			ES 1234678-HpCDD	70.9	
OCDD	ND	0.344			ES OCDD	67	
2378-TCDF	ND	0.0722			ES 2378-TCDF	90.4	
12378-PeCDF	ND	0.0722			ES 12378-PeCDF	77	
23478-PeCDF	ND	0.0725			ES 23478-PeCDF	79.9	
123478-HxCDF	ND	0.0943			ES 123478-HxCDF	78.1	
123678-HxCDF	ND	0.0837			ES 123678-HxCDF	87.9	
234678-HxCDF	ND	0.0961			ES 234678-HxCDF	85.2	
123789-HxCDF	ND	0.134			ES 123789-HxCDF	74	
1234678-HpCDF	ND	0.108			ES 1234678-HpCDF	75.6	
1234789-HpCDF	ND	0.164			ES 1234789-HpCDF	70.4	
OCDF	ND	0.251			ES OCDF	68.3	
<b>Totals</b>					<b>Standard</b>	<b>CS/AS Recoveries</b>	
Total TCDD	ND	0.1	ND		CS 37Cl-2378-TCDD	95.8	
Total PeCDD	ND	0.0878	ND		CS 12347-PeCDD	77.3	
Total HxCDD	ND	0.15	ND		CS 12346-PeCDF	86.8	
Total HpCDD	ND	0.141	ND		CS 123469-HxCDF	97.2	
Total TCDF	ND	0.0722	ND		CS 1234689-HpCDF	83.4	
Total PeCDF	ND	0.0724	ND		AS 1368-TCDD	n/a	
Total HxCDF	ND	0.0996	ND		AS 1368-TCDF	n/a	
Total HpCDF	ND	0.132	ND				
<b>Total PCDD/Fs</b>	<b>ND</b>		<b>ND</b>				
<b>ITEF TEQs</b>					2714 Exchange Drive		
TEQ: ND=0	0		0		ANALYTICAL PERSPECTIVES Wilmington, NC 28405 , USA		
TEQ: ND=DL/2	0.141		0.141		info@ultratrace.com		
TEQ: ND=DL	0.282		0.282		Tel: +1 910 794-1613 (Fax: -3919); Toll-Free 866 846-8290 www.ultratrace.com		

**Sample ID: 0\_7636\_MB001****Method 1613**

Client Data			Sample Data			Laboratory Data					
Name:	ENTRIX INC	Project ID:	General Analytical HRMS	Matrix:	Solids	Lab Project ID:	P2081	Date Received:	n/a		
Date Collected:	n/a	Weight/Volume:	10.00 g	% Solids:	n/a	Lab Sample ID:	MB1_7636_DF_SDS	Date Extracted:	19 Mar 2010		
				Split:	-	QC Batch No.:	7636	Date Analyzed:	25 Mar 2010		
Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc. (pg/g)	Qualifiers	Hepta-Dioxins	Conc. (pg/g)	Qualifiers
1368D	(0.1)		12479/12468D	(0.0878)		124679/124689D	(0.15)		1234679D	(0.141)	
1379D	(0.1)		12469D	(0.0878)		123468D	(0.15)		1234678D	(0.141)	
1369D	(0.1)		12368D	(0.0878)		123679/123689D	(0.15)				
1469D	(0.1)		12478D	(0.0878)		123469D	(0.15)				
1247D...[4]	(0.1)		12379D	(0.0878)		123478D	(0.148)				
1378D	(0.1)		12369D...[3]	(0.0878)		123678D	(0.142)				
1268D	(0.1)		12346/12347D	(0.0878)		123467D	(0.15)				
1478D	(0.1)		12378D	(0.0878)		123789D	(0.162)		Conc.	0	
1279D	(0.1)		12367D	(0.0878)					EMPC	0	
1234/1269D	(0.1)		12389D	(0.0878)					Octa-Dioxin	Conc (pg/g)	Qualifiers
1236D	(0.1)								OCDD	(0.344)	
1237/1238D	(0.1)										
1239D	(0.1)										
2378D	(0.1)										
1278D	(0.1)										
1267D	(0.1)										
1289D	(0.1)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				
 <b>ANALYTICAL PERSPECTIVES</b> Tel: +1 910 794-1613 Fax: +1 910 794-3919 info@ultratrace.com www.ultratrace.com											
<b>ITEF TEQs</b> <b>Conc.</b> <b>EMPC</b> TEQ: ND=0      0      0 TEQ: ND=DL/2      0.141      0.141 TEQ: ND=DL      0.282      0.282  <b>Total PCDD/Fs</b> <b>Conc.</b> <b>EMPC</b> Total PCDD/Fs      0      0											

Checkcode: 315-806

Report Created: 26-Mar-2010 09:36 Analyst: MC

**Sample ID: 0\_7636\_MB001****Method 1613**

Client Data			Sample Data			Laboratory Data					
Name:	ENTRIX INC	Project ID:	General Analytical HRMS	Matrix:	Solids	Lab Project ID:	P2081	Date Received:	n/a		
Date Collected:	n/a	Weight/Volume:	10.00 g	% Solids:	n/a	Lab Sample ID:	MB1_7636_DF_SDS	Date Extracted:	19 Mar 2010		
			% Solids:	-	Split:	QC Batch No.:	7636	Date Analyzed:	25 Mar 2010		
Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.0722)		13468/12468F	(0.0803)		123468F	(0.0996)		1234678F	(0.108)	
1468F	(0.0722)		13678F...[3]	(0.0724)		124678/134678F	(0.0996)		1234679F	(0.132)	
2468F	(0.0722)		12368F...[3]	(0.0724)		134679F	(0.0996)		1234689F	(0.132)	
1346/1246F	(0.0722)		14678F	(0.0724)		124679F	(0.0996)		1234789F	(0.164)	
1347F...[3]	(0.0722)		13479F	(0.0724)		124689F	(0.0996)				
1348F	(0.0722)		13469/12479F	(0.0724)		123467F	(0.0996)				
1248F...[3]	(0.0722)		12346F	(0.0724)		123478F	(0.0943)				
1268F	(0.0722)		23468/12469F	(0.0724)		123678F	(0.0837)				
1467F	(0.0722)		12347F	(0.0724)		123479F	(0.0996)				
1478F	(0.0722)		12348F	(0.0724)		123469F	(0.0996)				
1369/1237F	(0.0722)		12378F	(0.0722)		123679F	(0.0996)				
2467F	(0.0722)		12678/12367F	(0.0724)		234678F	(0.0961)		Conc.	0	
2368F	(0.0722)		12379F	(0.0724)		234678/123689F	(0.0961)		EMPC	0	
1238F...[5]	(0.0722)		12679F	(0.0724)		123689F	(0.0996)				
1278F	(0.0722)		23467/12369F	(0.0724)		123789F	(0.134)		Octa-Furan	Conc	Qualifiers
1349F	(0.0722)		23478F	(0.0725)		123789/123489F	(0.134)			(pg/g)	
1267F	(0.0722)		23478/12489F	(0.0725)		123489F	(0.0996)		OCDF	(0.251)	
2346/1249F	(0.0722)		12489F	(0.0724)							
2347/1279F	(0.0722)		12349F	(0.0724)							
2348F	(0.0722)		12389F	(0.0724)							
2378F	(0.0722)										
2367/3467F	(0.0722)										
1269F	(0.0722)										
1239F	(0.0722)										
1289F	(0.0722)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				

Checkcode: 315-806

Report Created: 26-Mar-2010 09:36 Analyst: MC

Sample ID: 0_7636_MB001			TEQ Summary			Method 1613
Client Project Name:	ENTRIX INC	Matrix:	Solids	Lab Sample ID:	MB1_7636_DF_SDS	
Client Project ID:	General Analytical HRMS	Weight/Volume:	10.00 g	QC Batch No.:	7636	
Date Collected:	n/a	Split:	-	Date Extracted:	19 Mar 2010	
Date Received:	n/a	Dilution:	-	Date Analyzed:	25 Mar 2010 19:08	
Lab Project No:	P2081 <th>Units</th> <td>pg/g</td> <th></th> <td></td> <td></td>	Units	pg/g			
Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.1)		0.1	(0.1)	(0.1)	(0.1)
12378-PeCDD	(0.0878)		0.0878	(0.0439)	(0.0878)	(0.0878)
123478-HxCDD	(0.148)		0.148	(0.0148)	(0.0148)	(0.0148)
123678-HxCDD	(0.142)		0.142	(0.0142)	(0.0142)	(0.0142)
123789-HxCDD	(0.162)		0.162	(0.0162)	(0.0162)	(0.0162)
1234678-HpCDD	(0.141)		0.141	(0.00141)	(0.00141)	(0.00141)
OCDD	(0.344)		0.344	(0.000344)	(0.0000344)	(0.000103)
2378-TCDF	(0.0722)		0.0722	(0.00722)	(0.00722)	(0.00722)
12378-PeCDF	(0.0722)		0.0722	(0.00361)	(0.00361)	(0.00217)
23478-PeCDF	(0.0725)		0.0725	(0.0363)	(0.0363)	(0.0218)
123478-HxCDF	(0.0943)		0.0943	(0.00943)	(0.00943)	(0.00943)
123678-HxCDF	(0.0837)		0.0837	(0.00837)	(0.00837)	(0.00837)
234678-HxCDF	(0.0961)		0.0961	(0.00961)	(0.00961)	(0.00961)
123789-HxCDF	(0.134)		0.134	(0.0134)	(0.0134)	(0.0134)
1234678-HpCDF	(0.108)		0.108	(0.00108)	(0.00108)	(0.00108)
1234789-HpCDF	(0.164)		0.164	(0.00164)	(0.00164)	(0.00164)
OCDF	(0.251)		0.251	(0.000251)	(0.0000251)	(0.0000753)
 <b>ANALYTICAL PERSPECTIVES</b> 2714 Exchange Drive Wilmington, NC 28405, USA Tel: +1 910 794-1613; Toll-Free 866 846-8290 Fax: +1 910 794-3919 <a href="mailto:info@ultratrace.com">info@ultratrace.com</a> <a href="http://www.ultratrace.com">www.ultratrace.com</a>		<b>TEQ Summaries</b>				
		EMPC = 0, ND = 0		0	0	0
		EMPC = 0, ND = DL / 2		0.141	0.163	0.155
		EMPC = 0, ND = DL		0.282	0.325	0.309
		EMPC = 0, < J-level = 0		0	0	0
		EMPC = EMPC, ND = 0		0	0	0
		EMPC = EMPC, ND = DL / 2		0.141	0.163	0.155
		EMPC = EMPC, ND = DL		0.282	0.325	0.309
		EMPC = EMPC, < J-level = 0		0	0	0

Checkcode: 315-806

AP D/F 2010 Rev. L

GIV\_NBC\_0319549

**Sample ID: SB7-10****Method 1613**

<u><b>Client Data</b></u>		<u><b>Sample Data</b></u>		<u><b>Laboratory Data</b></u>			
Name:	ENTRIX INC	Matrix:	Solids	Lab Project ID:	P2081	Date Received:	16 Mar 2010
Project ID:	General Analytical HRMS	Weight/Volume:	10.26 g	Lab Sample ID	P2081_7636_001	Date Extracted:	19 Mar 2010
Date Collected:	28 Oct 2009	% Solids:	88.5 %	QC Batch No:	7636	Date Analyzed:	25 Mar 2010
		Split:	-	Dilution:	-	Time Analyzed:	19:58:30
<b>Analyte</b>	<b>Conc. (pg/g)</b>	<b>DL (pg/g)</b>	<b>EMPC (pg/g)</b>	<b>Qualifiers</b>	<b>Standard</b>	<b>ES Recoveries</b>	<b>Qualifiers</b>
2378-TCDD	777	[Ra=0.80]			ES 2378-TCDD	80.1	
12378-PeCDD	75.5				ES 12378-PeCDD	76.4	
123478-HxCDD	31				ES 123478-HxCDD	76.2	
123678-HxCDD	52.5				ES 123678-HxCDD	80.1	
123789-HxCDD	EMPC		39.7		ES 123789-HxCDD	78.4	
1234678-HpCDD	110				ES 1234678-HpCDD	81.3	
OCDD	501				ES OCDD	76.8	
2378-TCDF	20				ES 2378-TCDF	84.8	
12378-PeCDF	3.59				ES 12378-PeCDF	68.7	
23478-PeCDF	ND	0.327			ES 23478-PeCDF	77.2	
123478-HxCDF	6.87				ES 123478-HxCDF	75.9	
123678-HxCDF	6.09				ES 123678-HxCDF	83.1	
234678-HxCDF	ND	0.173			ES 234678-HxCDF	79.5	
123789-HxCDF	ND	0.238			ES 123789-HxCDF	73.2	
1234678-HpCDF	32.1				ES 1234678-HpCDF	78.1	
1234789-HpCDF	2.56				ES 1234789-HpCDF	77.7	
OCDF	50.8				ES OCDF	73.5	
<b>Totals</b>					<b>Standard</b>	<b>CS/AS Recoveries</b>	
Total TCDD	894		897		CS 37CI-2378-TCDD	102	
Total PeCDD	311		311		CS 12347-PeCDD	80.1	
Total HxCDD	475		529		CS 12346-PeCDF	85.9	
Total HpCDD	234		234		CS 123469-HxCDF	100	
Total TCDF	610		630		CS 1234689-HpCDF	121	
Total PeCDF	1610		1620		AS 1368-TCDD	n/a	
Total HxCDF	13900		13900		AS 1368-TCDF	n/a	
Total HpCDF	86		86				
<b>Total PCDD/Fs</b>	<b>18700</b>		<b>18800</b>				
<b>ITEF TEQs</b>					2714 Exchange Drive <b>ANALYTICAL PERSPECTIVES</b> Wilmington, NC 28405 , USA info@ultratrace.com		
TEQ: ND=0	829		833				
TEQ: ND=DL/2	829		833				
TEQ: ND=DL	829		833				

**Sample ID: SB7-10****Method 1613**

Client Data			Sample Data			Laboratory Data					
Name:	ENTRIX INC		Matrix:	Solids		Lab Project ID:	P2081		Date Received:	16 Mar 2010	
Project ID:	General Analytical HRMS		Weight/Volume:	10.26 g		Lab Sample ID:	P2081_7636_001		Date Extracted:	19 Mar 2010	
Date Collected:	28 Oct 2009		% Solids:	88.5 %		QC Batch No.:	7636		Date Analyzed:	25 Mar 2010	
			Split:	-		Dilution:	-		Time Analyzed:	19:58:30	
Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	15.7		12479/12468D	30.6		124679/124689D	179		1234679D	124	
1379D	5.94		12469D	5.06		123468D	17.1		1234678D	110	
1369D	1.42		12368D	12.6		123679/123689D	191				
1469D	0.423		12478D	143		123469D	[14.5]				
1247D...[4]	16.2	J	12379D	13.2		123478D	31				
1378D	37.1		12369D...[3]	14.1		123678D	52.5				
1268D	[1.6]		12346/12347D	4.45		123467D	4.3				
1478D	7.92		12378D	75.5		123789D	[39.7]		Conc.	234	
1279D	1.8		12367D	8.07					EMPC	234	
1234/1269D	1.86		12389D	4.48					Octa-Dioxin	Conc	Qualifiers
1236D	[0.825]									(pg/g)	
1237/1238D	9.5								OCDD	501	
1239D	(0.102)										
2378D	777										
1278D	18.5										
1267D	(0.102)										
1289D	[0.525]										
Conc.	894		Conc.	311		Conc.	475				
EMPC	897		EMPC	311		EMPC	529				
						ITEF TEQs	Conc.	EMPC			
						TEQ: ND=0	829	833			
						TEQ: ND=DL/2	829	833			
						TEQ: ND=DL	829	833			
						Total PCDD/Fs	Conc.	EMPC			
							18,700	18,800			

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Checkcode: 191-718

Report Created: 02-Apr-2010 13:26 Analyst: MC

**Sample ID: SB7-10****Method 1613**

Client Data			Sample Data			Laboratory Data					
Name:	ENTRIX INC		Matrix:	Solids		Lab Project ID:	P2081		Date Received:	16 Mar 2010	
Project ID:	General Analytical HRMS		Weight/Volume:	10.26 g		Lab Sample ID:	P2081_7636_001		Date Extracted:	19 Mar 2010	
Date Collected:	28 Oct 2009		% Solids:	88.5 %		QC Batch No.:	7636		Date Analyzed:	25 Mar 2010	
Split:	-		Dilution:	-		Time Analyzed:	19:58:30				
Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	38.2		13468/12468F	539		123468F	7.8		1234678F	32.1	
1468F	37.3		13678F...[3]	392		124678/134678F	115		1234679F	20.2	
2468F	5.98		12368F...[3]	212		134679F	231		1234689F	31.1	
1346/1246F	[16.9]		14678F	(0.348)		124679F	13200	*	1234789F	2.56	
1347F...[3]	96.8		13479F	8.28		124689F	261				
1348F	13.3		13469/12479F	228		123467F	5.66				
1248F...[3]	44.3		12346F	(0.348)		123478F	6.87				
1268F	5.28		23468/12469F	125		123678F	6.09				
1467F	4.63		12347F	(0.348)		123479F	(0.179)				
1478F	30.2		12348F	3.89		123469F	[1.03]	J			
1369/1237F	[2.45]		12378F	3.59		123679F	19.2				
2467F	13.2		12678/12367F	[10]		234678F	(0.173)		Conc.	86	
2368F	181		12379F	1.3		234678/123689F	111		EMPC	86	
1238F...[5]	10.6		12679F	80.1		123689F	(0.179)				
1278F	44.4		23467/12369F	6.3		123789F	(0.238)		Octa-Furan	Conc	Qualifiers
1349F	(0.143)		23478F	(0.327)		123789/123489F	[1.75]	J		(pg/g)	
1267F	8.37		23478/12489F	12.2		123489F	(0.179)		OCDF	50.8	
2346/1249F	4.2		12489F	(0.348)							
2347/1279F	4.86		12349F	[0.425]							
2348F	2.55		12389F	0.867							
2378F	20										
2367/3467F	6.55										
1269F	1.82										
1239F	[0.618]										
1289F	36.5										
Conc.	610		Conc.	1,610		Conc.	13,900				
EMPC	630		EMPC	1,620		EMPC	13,900				

Checkcode: 191-718

Report Created: 02-Apr-2010 13:26 Analyst: MC

Sample ID: SB7-10			TEQ Summary			Method 1613
Client Project Name: Client Project ID: Date Collected: Date Received: Lab Project No:		Matrix: Weight/Volume: Split: Dilution: Units	Solids 10.26 g - - pg/g	Lab Sample ID: QC Batch No.: Date Extracted: Date Analyzed:	P2081_7636_001 7636 19 Mar 2010 25 Mar 2010 19:58	
Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	777		0.102	777	777	777
12378-PeCDD	75.5		0.17	37.8	75.5	75.5
123478-HxCDD	31		0.17	3.1	3.1	3.1
123678-HxCDD	52.5		0.17	5.25	5.25	5.25
123789-HxCDD	[39.7]		0.186	[3.97]	[3.97]	[3.97]
1234678-HpCDD	110		0.154	1.1	1.1	1.1
OCDD	501		0.319	0.501	0.0501	0.15
2378-TCDF	20		0.143	2	2	2
12378-PeCDF	3.59		0.37	0.18	0.18	0.108
23478-PeCDF	(0.327)		0.327	(0.164)	(0.164)	(0.0981)
123478-HxCDF	6.87		0.164	0.687	0.687	0.687
123678-HxCDF	6.09		0.156	0.609	0.609	0.609
234678-HxCDF	(0.173)		0.173	(0.0173)	(0.0173)	(0.0173)
123789-HxCDF	(0.238)		0.238	(0.0238)	(0.0238)	(0.0238)
1234678-HpCDF	32.1		0.111	0.321	0.321	0.321
1234789-HpCDF	2.56		0.159	0.0256	0.0256	0.0256
OCDF	50.8		0.213	0.0508	0.00508	0.0152
 <b>ANALYTICAL PERSPECTIVES</b> 2714 Exchange Drive Wilmington, NC 28405, USA Tel: +1 910 794-1613; Toll-Free 866 846-8290 Fax: +1 910 794-3919 info@ultratrace.com www.ultratrace.com		TEQ Summaries				
		EMPC = 0, ND = 0		829	866	866
		EMPC = 0, ND = DL / 2		829	866	866
		EMPC = 0, ND = DL		829	866	866
		EMPC = 0, < J-level = 0		829	866	866
		EMPC = EMPC, ND = 0		833	870	870
		EMPC = EMPC, ND = DL / 2		833	870	870
		EMPC = EMPC, ND = DL		833	870	870
		EMPC = EMPC, < J-level = 0		833	870	870

Checkcode: 191-718

AP D/F 2010 Rev. L

GIV\_NBC\_0319553

**Sample ID: SB13-14****Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	ENTRIX INC	Matrix:	Solids	Lab Project ID:	P2081	Date Received:	16 Mar 2010
Project ID:	General Analytical HRMS	Weight/Volume:	10.17 g	Lab Sample ID	P2081_7636_002	Date Extracted:	19 Mar 2010
Date Collected:	28 Oct 2009	% Solids:	87.8 %	QC Batch No:	7636	Date Analyzed:	25 Mar 2010
		Split:	-	Dilution:	-	Time Analyzed:	20:48:59
Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	3050	[Ra=0.80]		*	ES 2378-TCDD	82.6	
12378-PeCDD	694				ES 12378-PeCDD	77	
123478-HxCDD	371				ES 123478-HxCDD	78.9	
123678-HxCDD	451				ES 123678-HxCDD	82.7	
123789-HxCDD	EMPC				ES 123789-HxCDD	85.2	
1234678-HpCDD	1030				ES 1234678-HpCDD	86.3	
OCDD	1320				ES OCDD	79.9	
2378-TCDF	39.3				ES 2378-TCDF	80.6	
12378-PeCDF	17.2				ES 12378-PeCDF	68.8	
23478-PeCDF	ND	0.678			ES 23478-PeCDF	74.4	
123478-HxCDF	34.5				ES 123478-HxCDF	74	
123678-HxCDF	21.9				ES 123678-HxCDF	80.1	
234678-HxCDF	105				ES 234678-HxCDF	76	
123789-HxCDF	ND	0.636			ES 123789-HxCDF	114	PR
1234678-HpCDF	130				ES 1234678-HpCDF	86.8	
1234789-HpCDF	13.5				ES 1234789-HpCDF	83.6	
OCDF	129				ES OCDF	78.7	
Totals					Standard	CS/AS Recoveries	
Total TCDD	3660		3670		CS 37Cl-2378-TCDD	122	
Total PeCDD	2720		2720		CS 12347-PeCDD	82.1	
Total HxCDD	3800		4300		CS 12346-PeCDF	88.4	
Total HpCDD	2080		2080		CS 123469-HxCDF	107	
					CS 1234689-HpCDF	140	> 130
Total TCDF	1910		1910		AS 1368-TCDD	n/a	
Total PeCDF	4850		4890		AS 1368-TCDF	n/a	
Total HxCDF	17400		17400				
Total HpCDF	303		303				
<b>Total PCDD/Fs</b>	<b>38200</b>		<b>38800</b>				
<b>ITEF TEQs</b>					2714 Exchange Drive		
TEQ: ND=0	3520		3550		ANALYTICAL PERSPECTIVES Wilmington, NC 28405 , USA		
TEQ: ND=DL/2	3520		3550		info@ultratrace.com		
TEQ: ND=DL	3520		3550		Tel: +1 910 794-1613 (Fax: -3919); Toll-Free 866 846-8290 www.ultratrace.com		

**Sample ID: SB13-14****Method 1613**

Client Data			Sample Data			Laboratory Data					
Name:	ENTRIX INC		Matrix:	Solids	Weight/Volume:	10.17 g	Lab Project ID:	P2081	Date Received:	16 Mar 2010	
Project ID:	General Analytical HRMS		% Solids:	87.8 %	Split:	-	Lab Sample ID:	P2081_7636_002	Date Extracted:	19 Mar 2010	
Date Collected:	28 Oct 2009		QC Batch No.:	7636	Dilution:	-	Date Analyzed:	25 Mar 2010			
Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	43		12479/12468D	257		124679/124689D	1300		1234679D	1050	
1379D	27.5		12469D	38.3		123468D	137		1234678D	1030	
1369D	10.2		12368D	121		123679/123689D	1500				
1469D	2.41		12478D	1230		123469D	[160]				
1247D...[4]	83.7		12379D	130		123478D	371				
1378D	175		12369D...[3]	106		123678D	451				
1268D	11.2		12346/12347D	38.1		123467D	39.5				
1478D	48.8		12378D	694		123789D	[342]		Conc.	2,080	
1279D	12.3		12367D	59.6					EMPC	2,080	
1234/1269D	11.2		12389D	44.1							
1236D	4.24								Octa-Dioxin	Conc	Qualifiers
1237/1238D	66.7									(pg/g)	
1239D	(0.235)								OCDD	1320	
2378D	3050	*									
1278D	113										
1267D	(0.235)										
1289D	[6.24]										
Conc.	3,660		Conc.	2,720		Conc.	3,800				
EMPC	3,670		EMPC	2,720		EMPC	4,300				
 <b>ANALYTICAL PERSPECTIVES</b> Tel: +1 910 794-1613 Fax: +1 910 794-3919 info@ultratrace.com www.ultratrace.com											
<b>ITEF TEQs</b> <b>Conc.</b> <b>EMPC</b> TEQ: ND=0      3,520      3,550 TEQ: ND=DL/2      3,520      3,550 TEQ: ND=DL      3,520      3,550											
<b>Total PCDD/Fs</b> <b>Conc.</b> <b>EMPC</b> Total PCDD/Fs      38,200      38,800											

Checkcode: 283-168

Report Created: 26-Mar-2010 09:37 Analyst: MC

**Sample ID: SB13-14****Method 1613**

Client Data			Sample Data			Laboratory Data					
Name:	ENTRIX INC		Matrix:	Solids	Weight/Volume:	Lab Project ID:	P2081	Date Received:	16 Mar 2010		
Project ID:	General Analytical HRMS		% Solids:	10.17 g	Split:	Lab Sample ID:	P2081_7636_002	Date Extracted:	19 Mar 2010		
Date Collected:	28 Oct 2009		Dilution:	7636		QC Batch No.:	7636	Date Analyzed:	25 Mar 2010		
Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc. (pg/g)	Qualifiers	Hepta-Furans	Conc. (pg/g)	Qualifiers
1368F	106		13468/12468F	949		123468F	36.2		1234678F	130	
1468F	66.2		13678F...[3]	2500		124678/134678F	231		1234679F	46	
2468F	19.6		12368F...[3]	393		134679F	365	*	1234689F	113	
1346/1246F	285		14678F	(0.69)		124679F	16000	*	1234789F	13.5	
1347F...[3]	445		13479F	24		124689F	590				
1348F	26.6		13469/12479F	514		123467F	28.9				
1248F...[3]	129		12346F	9.87		123478F	34.5				
1268F	19.7		23468/12469F	206		123678F	21.9				
1467F	13.2		12347F	(0.69)		123479F	4.66				
1478F	46.6		12348F	17.1		123469F	5.15				
1369/1237F	9.79		12378F	17.2		123679F	44.8				
2467F	31.7		12678/12367F	[38.8]		234678F	105		Conc.	303	
2368F	389		12379F	2.91		234678/123689F	(0.51)		EMPC	303	
1238F...[5]	47.2		12679F	132		123689F	(0.519)				
1278F	78.7		23467/12369F	27.3		123789F	(0.636)		Octa-Furan	Conc	Qualifiers
1349F	(0.189)		23478F	(0.678)		123789/123489F	[6.9]			(pg/g)	
1267F	20.5		23478/12489F	51.1		123489F	(0.519)		OCDF	129	
2346/1249F	17.4		12489F	(0.69)							
2347/1279F	18.8		12349F	3.06							
2348F	8.7		12389F	[2.72]							
2378F	39.3										
2367/3467F	22.8										
1269F	4.28										
1239F	3.96										
1289F	56										
Conc.	1,910		Conc.	4,850		Conc.	17,400				
EMPC	1,910		EMPC	4,890		EMPC	17,400				

Checkcode: 283-168

Report Created: 26-Mar-2010 09:37 Analyst: MC

Sample ID: SB13-14			TEQ Summary			Method 1613
Client Project Name:	ENTRIX INC	Matrix:	Solids	Lab Sample ID:	P2081_7636_002	
Client Project ID:	General Analytical HRMS	Weight/Volume:	10.17 g	QC Batch No.:	7636	
Date Collected:	28 Oct 2009	Split:	-	Date Extracted:	19 Mar 2010	
Date Received:	16 Mar 2010	Dilution:	-	Date Analyzed:	25 Mar 2010 20:48	
Lab Project No:	P2081	Units	pg/g			
Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	3050	*	0.235	3050	3050	3050
12378-PeCDD	694		0.386	347	694	694
123478-HxCDD	371		0.35	37.1	37.1	37.1
123678-HxCDD	451		0.355	45.1	45.1	45.1
123789-HxCDD	[342]		0.43	[34.2]	[34.2]	[34.2]
1234678-HpCDD	1030		0.142	10.3	10.3	10.3
OCDD	1320		0.342	1.32	0.132	0.397
2378-TCDF	39.3		0.189	3.93	3.93	3.93
12378-PeCDF	17.2		0.702	0.858	0.858	0.515
23478-PeCDF	(0.678)		0.678	(0.339)	(0.339)	(0.203)
123478-HxCDF	34.5		0.474	3.45	3.45	3.45
123678-HxCDF	21.9		0.438	2.19	2.19	2.19
234678-HxCDF	105		0.51	10.5	10.5	10.5
123789-HxCDF	(0.636)		0.636	(0.0636)	(0.0636)	(0.0636)
1234678-HpCDF	130		0.101	1.3	1.3	1.3
1234789-HpCDF	13.5		0.151	0.135	0.135	0.135
OCDF	129		0.23	0.129	0.0129	0.0387
 <b>ANALYTICAL PERSPECTIVES</b> 2714 Exchange Drive Wilmington, NC 28405, USA Tel: +1 910 794-1613; Toll-Free 866 846-8290 Fax: +1 910 794-3919 <a href="mailto:info@ultratrace.com">info@ultratrace.com</a> <a href="http://www.ultratrace.com">www.ultratrace.com</a>		TEQ Summaries				
		EMPC = 0, ND = 0		3520	3860	3860
		EMPC = 0, ND = DL / 2		3520	3860	3860
		EMPC = 0, ND = DL		3520	3860	3860
		EMPC = 0, < J-level = 0		3520	3860	3860
		EMPC = EMPC, ND = 0		3550	3890	3890
		EMPC = EMPC, ND = DL / 2		3550	3900	3890
		EMPC = EMPC, ND = DL		3550	3900	3900
		EMPC = EMPC, < J-level = 0		3550	3890	3890

Checkcode: 283-168

AP D/F 2010 Rev. L

GIV\_NBC\_0319557

**Sample ID: SB2-12****Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	ENTRIX INC	Matrix:	Solids	Lab Project ID:	P2081	Date Received:	16 Mar 2010
Project ID:	General Analytical HRMS	Weight/Volume:	10.58 g	Lab Sample ID	P2081_7636_003	Date Extracted:	19 Mar 2010
Date Collected:	28 Oct 2009	% Solids:	88.1 %	QC Batch No:	7636	Date Analyzed:	25 Mar 2010
		Split:	-	Dilution:	-	Time Analyzed:	21:39:28
Analyste	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	7410	[Ra=0.80]		*	ES 2378-TCDD	81.6	
12378-PeCDD	2530				ES 12378-PeCDD	77.6	
123478-HxCDD	1430				ES 123478-HxCDD	82	
123678-HxCDD	1450				ES 123678-HxCDD	88.7	
123789-HxCDD	1030				ES 123789-HxCDD	86.7	
1234678-HpCDD	4070				ES 1234678-HpCDD	88.5	
OCDD	4030				ES OCDD	71.2	
2378-TCDF	123				ES 2378-TCDF	78.3	
12378-PeCDF	75				ES 12378-PeCDF	65.9	
23478-PeCDF	193				ES 23478-PeCDF	69.7	
123478-HxCDF	160				ES 123478-HxCDF	73.4	
123678-HxCDF	145				ES 123678-HxCDF	78.1	
234678-HxCDF	304				ES 234678-HxCDF	73.6	
123789-HxCDF	ND	0.69			ES 123789-HxCDF	216	> 147, PR
1234678-HpCDF	707				ES 1234678-HpCDF	75.5	
1234789-HpCDF	54.9				ES 1234789-HpCDF	78.5	
OCDF	370				ES OCDF	58.7	
Totals					Standard	CS/AS Recoveries	
Total TCDD	9790		9810		CS 37CI-2378-TCDD	149	
Total PeCDD	8840		8840		CS 12347-PeCDD	76.5	
Total HxCDD	12300		12400		CS 12346-PeCDF	87.8	
Total HpCDD	7760		7760		CS 123469-HxCDF	110	
Total TCDF	4420		4590		CS 1234689-HpCDF	138	
Total PeCDF	7480		7480		AS 1368-TCDD	n/a	
Total HxCDF	11500		11500		AS 1368-TCDF	n/a	
Total HpCDF	1180		1180				
<b>Total PCDD/Fs</b>	<b>67700</b>		<b>68000</b>				
<b>ITEF TEQs</b>					2714 Exchange Drive		
TEQ: ND=0	9290		9290		ANALYTICAL PERSPECTIVES Wilmington, NC 28405 , USA		
TEQ: ND=DL/2	9290		9290		info@ultratrace.com		
TEQ: ND=DL	9290		9290		Tel: +1 910 794-1613 (Fax: -3919); Toll-Free 866 846-8290 www.ultratrace.com		

**Sample ID: SB2-12****Method 1613**

<u><b>Client Data</b></u>			<u><b>Sample Data</b></u>			<u><b>Laboratory Data</b></u>					
Name:	ENTRIX INC		Matrix:	Solids		Lab Project ID:	P2081		Date Received:	16 Mar 2010	
Project ID:	General Analytical HRMS		Weight/Volume:	10.58 g		Lab Sample ID:	P2081_7636_003		Date Extracted:	19 Mar 2010	
Date Collected:	28 Oct 2009		% Solids:	88.1 %		QC Batch No.:	7636		Date Analyzed:	25 Mar 2010	
			Split:	-		Dilution:	-		Time Analyzed:	21:39:28	
Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	253		12479/12468D	837		124679/124689D	2940		1234679D	3690	
1379D	156		12469D	109		123468D	603		1234678D	4070	
1369D	41.5		12368D	443		123679/123689D	4660				
1469D	8.76		12478D	3600		123469D	[158]				
1247D...[4]	327		12379D	445		123478D	1430				
1378D	545		12369D...[3]	335		123678D	1450				
1268D	48		12346/12347D	182		123467D	150				
1478D	205		12378D	2530		123789D	1030		Conc.	7,760	
1279D	50.4		12367D	231					EMPC	7,760	
1234/1269D	46.1		12389D	136							
1236D	19.5								Octa-Dioxin	Conc	Qualifiers
1237/1238D	303									(pg/g)	
1239D	(0.314)								OCDD	4030	
2378D	7410	*									
1278D	378										
1267D	(0.314)										
1289D	[17.9]										
Conc.	9,790		Conc.	8,840		Conc.	12,300				
EMPC	9,810		EMPC	8,840		EMPC	12,400				
						ITEF TEQs	Conc.	EMPC			
						TEQ: ND=0	9,290	9,290			
						TEQ: ND=DL/2	9,290	9,290			
						TEQ: ND=DL	9,290	9,290			
							Conc.	EMPC			
						Total PCDD/Fs	67,700	68,000			



ANALYTICAL PERSPECTIVES

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Checkcode: 518-916

Report Created: 26-Mar-2010 09:37 Analyst: MC

GIV\_NBC\_0319559

**Sample ID: SB2-12**
**Method 1613**

Client Data			Sample Data			Laboratory Data					
Name:	ENTRIX INC		Matrix:	Solids		Lab Project ID:	P2081		Date Received:	16 Mar 2010	
Project ID:	General Analytical HRMS		Weight/Volume:	10.58 g		Lab Sample ID:	P2081_7636_003		Date Extracted:	19 Mar 2010	
Date Collected:	28 Oct 2009		% Solids:	88.1 %		QC Batch No.:	7636		Date Analyzed:	25 Mar 2010	
Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	144		13468/12468F	933		123468F	134		1234678F	707	
1468F	116		13678F...[3]	3880		124678/134678F	491		1234679F	99.8	
2468F	62.1		12368F...[3]	789		134679F	171		1234689F	320	
1346/1246F	317		14678F	107		124679F	9160	*	1234789F	54.9	
1347F...[3]	1110	*	13479F	34.5		124689F	776				
1348F	73.2		13469/12479F	482		123467F	131				
1248F...[3]	341		12346F	66.8		123478F	160				
1268F	87.2		23468/12469F	309		123678F	145				
1467F	63.1		12347F	63.8		123479F	(0.812)				
1478F	149		12348F	69.6		123469F	17.7				
1369/1237F	55.5		12378F	75		123679F	30.9				
2467F	103		12678/12367F	183		234678F	304		Conc.	1,180	
2368F	876		12379F	9.29		234678/123689F	(1.04)		EMPC	1,180	
1238F...[5]	[167]		12679F	113		123689F	(0.812)				
1278F	218		23467/12369F	142		123789F	(0.69)		Octa-Furan	Conc	Qualifiers
1349F	13.3		23478F	193		123789/123489F	17.9			(pg/g)	
1267F	74.4		23478/12489F	(0.763)		123489F	(0.812)		OCDF	370	
2346/1249F	102		12489F	(0.778)							
2347/1279F	96.4		12349F	15.5							
2348F	71.6		12389F	12.2							
2378F	123										
2367/3467F	146										
1269F	14.2										
1239F	14										
1289F	50.5										
Conc.	4,420		Conc.	7,480		Conc.	11,500				
EMPC	4,590		EMPC	7,480		EMPC	11,500				

Checkcode: 518-916

Report Created: 26-Mar-2010 09:37 Analyst: MC

Sample ID: SB2-12			TEQ Summary			Method 1613
Client Project Name:	ENTRIX INC	Matrix:	Solids	Lab Sample ID:	P2081_7636_003	
Client Project ID:	General Analytical HRMS	Weight/Volume:	10.58 g	QC Batch No.:	7636	
Date Collected:	28 Oct 2009	Split:	-	Date Extracted:	19 Mar 2010	
Date Received:	16 Mar 2010	Dilution:	-	Date Analyzed:	25 Mar 2010 21:39	
Lab Project No:	P2081	Units	pg/g			
Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	7410	*	0.314	7410	7410	7410
12378-PeCDD	2530		1.08	1270	2530	2530
123478-HxCDD	1430		1.54	143	143	143
123678-HxCDD	1450		1.69	145	145	145
123789-HxCDD	1030		1.97	103	103	103
1234678-HpCDD	4070		0.181	40.7	40.7	40.7
OCDD	4030		0.264	4.03	0.403	1.21
2378-TCDF	123		0.569	12.3	12.3	12.3
12378-PeCDF	75		0.793	3.75	3.75	2.25
23478-PeCDF	193		0.763	96.4	96.4	57.8
123478-HxCDF	160		0.878	16	16	16
123678-HxCDF	145		0.845	14.5	14.5	14.5
234678-HxCDF	304		1.04	30.4	30.4	30.4
123789-HxCDF	(0.69)		0.69	(0.069)	(0.069)	(0.069)
1234678-HpCDF	707		0.19	7.07	7.07	7.07
1234789-HpCDF	54.9		0.267	0.549	0.549	0.549
OCDF	370		0.259	0.37	0.037	0.111
		TEQ Summaries				
 <b>ANALYTICAL PERSPECTIVES</b> 2714 Exchange Drive Wilmington, NC 28405, USA Tel: +1 910 794-1613; Toll-Free 866 846-8290 Fax: +1 910 794-3919 <a href="mailto:info@ultratrace.com">info@ultratrace.com</a> <a href="http://www.ultratrace.com">www.ultratrace.com</a>		EMPC = 0, ND = 0	9290	10600	10500	
		EMPC = 0, ND = DL / 2	9290	10600	10500	
		EMPC = 0, ND = DL	9290	10600	10500	
		EMPC = 0, < J-level = 0	9290	10600	10500	
		EMPC = EMPC, ND = 0	9290	10600	10500	
		EMPC = EMPC, ND = DL / 2	9290	10600	10500	
		EMPC = EMPC, ND = DL	9290	10600	10500	
		EMPC = EMPC, < J-level = 0	9290	10600	10500	

Checkcode: 518-916

AP D/F 2010 Rev. L

GIV\_NBC\_0319561

**Sample ID: SB10-12****Method 1613**

<u><b>Client Data</b></u>		<u><b>Sample Data</b></u>		<u><b>Laboratory Data</b></u>			
Name:	ENTRIX INC	Matrix:	Solids	Lab Project ID:	P2081	Date Received:	16 Mar 2010
Project ID:	General Analytical HRMS	Weight/Volume:	10.41 g	Lab Sample ID	P2081_7636_004	Date Extracted:	19 Mar 2010
Date Collected:	28 Oct 2009	% Solids:	87.1 %	QC Batch No:	7636	Date Analyzed:	25 Mar 2010
		Split:	-	Dilution:	-	Time Analyzed:	22:30:02
<b>Analyte</b>	<b>Conc. (pg/g)</b>	<b>DL (pg/g)</b>	<b>EMPC (pg/g)</b>	<b>Qualifiers</b>	<b>Standard</b>	<b>ES Recoveries</b>	<b>Qualifiers</b>
2378-TCDD	7230	[Ra=0.80]		*	ES 2378-TCDD	83.4	
12378-PeCDD	2210				ES 12378-PeCDD	85.1	
123478-HxCDD	1340				ES 123478-HxCDD	86.2	
123678-HxCDD	1560				ES 123678-HxCDD	91.6	
123789-HxCDD	827				ES 123789-HxCDD	91.9	
1234678-HpCDD	4960			*	ES 1234678-HpCDD	102	
OCDD	4290				ES OCDD	100	
2378-TCDF	68.4				ES 2378-TCDF	73.8	
12378-PeCDF	43				ES 12378-PeCDF	76.3	
23478-PeCDF	106				ES 23478-PeCDF	82.7	
123478-HxCDF	114				ES 123478-HxCDF	80.2	
123678-HxCDF	83.4				ES 123678-HxCDF	82.7	
234678-HxCDF	112				ES 234678-HxCDF	93.9	
123789-HxCDF	ND	0.79			ES 123789-HxCDF	143	PR
1234678-HpCDF	455				ES 1234678-HpCDF	89.1	
1234789-HpCDF	33.8				ES 1234789-HpCDF	97.1	
OCDF	182				ES OCDF	91.2	
<b>Totals</b>					<b>Standard</b>	<b>CS/AS Recoveries</b>	
Total TCDD	8400		8430		CS 37CI-2378-TCDD	139	
Total PeCDD	6260		6260		CS 12347-PeCDD	79.3	
Total HxCDD	10000		10000		CS 12346-PeCDF	94.2	
Total HpCDD	9080		9080		CS 123469-HxCDF	103	
Total TCDF	1930		1930		CS 1234689-HpCDF	133	
Total PeCDF	1880		1880		AS 1368-TCDD	n/a	
Total HxCDF	3390		3390		AS 1368-TCDF	n/a	
Total HpCDF	698		698				
<b>Total PCDD/Fs</b>	<b>46100</b>		<b>46100</b>				
<b>ITEF TEQs</b>							
TEQ: ND=0	8860		8860				
TEQ: ND=DL/2	8860		8860				
TEQ: ND=DL	8860		8860				


**ANALYTICAL PERSPECTIVES** Wilmington, NC 28405 , USA  
 Tel: +1 910 794-1613 (Fax: -3919); Toll-Free 866 846-8296 [www.ultratrace.com](http://www.ultratrace.com)  
 info@ultratrace.com

**Sample ID: SB10-12****Method 1613**

Client Data			Sample Data			Laboratory Data					
Name:	ENTRIX INC		Matrix:	Solids		Lab Project ID:	P2081		Date Received:	16 Mar 2010	
Project ID:	General Analytical HRMS		Weight/Volume:	10.41 g		Lab Sample ID:	P2081_7636_004		Date Extracted:	19 Mar 2010	
Date Collected:	28 Oct 2009		% Solids:	87.1 %		QC Batch No.:	7636		Date Analyzed:	25 Mar 2010	
Split:	-		Dilution:	-		Time Analyzed:	22:30:02				
Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	88.7		12479/12468D	416		124679/124689D	1830		1234679D	4120	
1379D	60.2		12469D	61.8		123468D	319		1234678D	4960	*
1369D	16.8		12368D	250		123679/123689D	3810				
1469D	[2.87]		12478D	2560		123469D	192				
1247D...[4]	130		12379D	236		123478D	1340				
1378D	307		12369D...[3]	190		123678D	1560				
1268D	21.2		12346/12347D	90.2		123467D	124				
1478D	80.2		12378D	2210		123789D	827				
1279D	23.5		12367D	169							
1234/1269D	20.4		12389D	73.6							
1236D	[12]										
1237/1238D	144										
1239D	13.4										
2378D	7230	*									
1278D	264										
1267D	(0.478)										
1289D	[6.99]										
Conc.	8,400		Conc.	6,260		Conc.	10,000				
EMPC	8,430		EMPC	6,260		EMPC	10,000				
						ITEF TEQs	Conc.	EMPC			
						TEQ: ND=0	8,860	8,860			
						TEQ: ND=DL/2	8,860	8,860			
						TEQ: ND=DL	8,860	8,860			
							Conc.	EMPC			
						Total PCDD/Fs	46,100	46,100			

  
**ANALYTICAL PERSPECTIVES**  
 2714 Exchange Drive  
 Wilmington, NC 28405, USA

Tel: +1 910 794-1613  
 Fax: +1 910 794-3919  
[info@ultratrace.com](mailto:info@ultratrace.com)  
[www.ultratrace.com](http://www.ultratrace.com)

Checkcode: 101-554

Report Created: 26-Mar-2010 09:38 Analyst: MC

**Sample ID: SB10-12**
**Method 1613**

<u>Client Data</u>			<u>Sample Data</u>			<u>Laboratory Data</u>					
Name:	ENTRIX INC		Matrix:	Solids		Lab Project ID:	P2081		Date Received:	16 Mar 2010	
Project ID:	General Analytical HRMS		Weight/Volume:	10.41 g		Lab Sample ID:	P2081_7636_004		Date Extracted:	19 Mar 2010	
Date Collected:	28 Oct 2009		% Solids:	87.1 %		QC Batch No.:	7636		Date Analyzed:	25 Mar 2010	
			Split:	-		Dilution:	-		Time Analyzed:	22:30:02	
Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	43.6		13468/12468F	339		123468F	77.5		1234678F	455	
1468F	49.9		13678F...[3]	463		124678/134678F	300		1234679F	75.9	
2468F	28.4		12368F...[3]	303		134679F	79		1234689F	134	
1346/1246F	173		14678F	48		124679F	2210		1234789F	33.8	
1347F...[3]	154		13479F	9.37		124689F	249				
1348F	27.2		13469/12479F	81.1		123467F	110				
1248F...[3]	127		12346F	44.3		123478F	114				
1268F	39		23468/12469F	112		123678F	83.4				
1467F	39.3		12347F	48.3		123479F	10.9				
1478F	70.1		12348F	39.1		123469F	14.7				
1369/1237F	25		12378F	43		123679F	14.2				
2467F	66.6		12678/12367F	105		234678F	112		Conc.	698	
2368F	433		12379F	4.04		234678/123689F	(0.779)		EMPC	698	
1238F...[5]	86.4		12679F	26.8		123689F	(0.76)				
1278F	130		23467/12369F	91.1		123789F	(0.79)		Octa-Furan	Conc	Qualifiers
1349F	3.59		23478F	106		123789/123489F	17.2			(pg/g)	
1267F	40.5		23478/12489F	(0.512)		123489F	(0.76)		OCDF	182	
2346/1249F	76.2		12489F	(0.522)							
2347/1279F	59.9		12349F	9.94							
2348F	37.3		12389F	5.92							
2378F	68.4										
2367/3467F	118										
1269F	[5.87]										
1239F	10.4										
1289F	21.7										
Conc.	1,930		Conc.	1,880		Conc.	3,390				
EMPC	1,930		EMPC	1,880		EMPC	3,390				

Checkcode: 101-554

Report Created: 26-Mar-2010 09:38 Analyst: MC

Sample ID: SB10-12			TEQ Summary			Method 1613
Client Project Name: Client Project ID: Date Collected: Date Received: Lab Project No:		Matrix: Weight/Volume: Split: Dilution: Units	Solids 10.41 g - - pg/g	Lab Sample ID: QC Batch No.: Date Extracted: Date Analyzed:	P2081_7636_004 7636 19 Mar 2010 25 Mar 2010 22:30	
Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	7230	*	0.478	7230	7230	7230
12378-PeCDD	2210		1.22	1100	2210	2210
123478-HxCDD	1340		3.23	134	134	134
123678-HxCDD	1560		3.1	156	156	156
123789-HxCDD	827		3.81	82.7	82.7	82.7
1234678-HpCDD	4960	*	0.315	49.6	49.6	49.6
OCDD	4290		0.267	4.29	0.429	1.29
2378-TCDF	68.4		0.263	6.84	6.84	6.84
12378-PeCDF	43		0.532	2.15	2.15	1.29
23478-PeCDF	106		0.512	53	53	31.8
123478-HxCDF	114		0.734	11.4	11.4	11.4
123678-HxCDF	83.4		0.732	8.34	8.34	8.34
234678-HxCDF	112		0.779	11.2	11.2	11.2
123789-HxCDF	(0.79)		0.79	(0.079)	(0.079)	(0.079)
1234678-HpCDF	455		0.0773	4.55	4.55	4.55
1234789-HpCDF	33.8		0.1	0.338	0.338	0.338
OCDF	182		0.205	0.182	0.0182	0.0545
 <b>ANALYTICAL PERSPECTIVES</b> 2714 Exchange Drive Wilmington, NC 28405, USA Tel: +1 910 794-1613; Toll-Free 866 846-8290 Fax: +1 910 794-3919 <a href="mailto:info@ultratrace.com">info@ultratrace.com</a> <a href="http://www.ultratrace.com">www.ultratrace.com</a>		TEQ Summaries				
		EMPC = 0, ND = 0		8860	9960	9940
		EMPC = 0, ND = DL / 2		8860	9960	9940
		EMPC = 0, ND = DL		8860	9960	9940
		EMPC = 0, < J-level = 0		8860	9960	9940
		EMPC = EMPC, ND = 0		8860	9960	9940
		EMPC = EMPC, ND = DL / 2		8860	9960	9940
		EMPC = EMPC, ND = DL		8860	9960	9940
		EMPC = EMPC, < J-level = 0		8860	9960	9940

Checkcode: 101-554

AP D/F 2010 Rev. L

GIV\_NBC\_0319565

# **PCDF Laboratory Report P1789**

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**APPENDIX B**


**ANALYTICAL PERSPECTIVES**

15 December 2009

Rob Barrick  
 Entrix, Inc.  
 200 First Ave W. Suite 200  
 Seattle, WA 98119

Telephone: 206 779 5339  
 Email: [rbarwick@entrix.com](mailto:rbarwick@entrix.com)

**Subject:** Certificate of Results - Amended

Dear Rob;

Attached to this narrative are the analytical results you requested on the samples submitted for the determination of polychlorinated dibenzo-*p*-dioxins and dibenzofurans. The insert below summarizes the relevant information pertaining to your project. In particular, QC annotations bring to your attention specific analytical observations and assessments made during the sample handling and data interpretation phases. A brief description of the report's components is provided. Results reported relate only to the items tested.

<b>Project Information Summary</b>		When applicable, see QC Annotations for details
<b>Client Project No.</b>		Givaudan
<b>AP Project No.</b>		P1789
<b>Analytical Protocol</b>		Method 1613B
<b>No. Samples Submitted</b>	13	
<b>No. Samples Analyzed</b>	3 (other samples on hold)	
<b>No. Laboratory Method Blanks</b>	1	
<b>No. OPRs / Batch CS3</b>	1	
<b>No. Outstanding Samples</b>	none	
<b>Date Received</b>	30-Oct-2009	
<b>Condition Received</b>	good	
<b>Temperature upon Receipt (C)</b>	2	
<b>Extraction within Holding Time</b>	yes	
<b>Analysis within Holding Time</b>	yes	
<b>Data meet QA/QC Requirements</b>	yes	
<b>Exceptions</b>	none	
<b>Analytical Difficulties</b>	none	

2714 EXCHANGE DRIVE  
 WILMINGTON, NC 28405  
 PH.: 910-794-1613

**ANALYTICAL PERSPECTIVES****QC Annotations:**

1. The "EMPC" data qualifier is used for analytes reported as an Estimated Maximum Possible Concentration. This flag indicates that a peak is detected but did not meet all of the method required criteria.
2. A "J" data qualifier is used for analytes with a concentration below the reporting limit.
3. The new ratio - [Ra] -- for 2,3,7,8-TCDD following the  $^{37}\text{Cl}_4$ -2,3,7,8-TCDD correction is shown between squared brackets in the DL column.
4. An asterisk (\*) qualifier denotes a concentration determined to be above the method's calibration range but within the instrument's analytical range; such a value should therefore be considered as an estimate.
5. A "CU" is appended to a few of the sample IDs indicating results reported from a clean-up of the sample extract. The clean-up procedure was performed to remove quantitative interferences and enhances, not undermines data quality.
6. A ">147" indicates that the 1,2,3,7,8,9-HxCDF is outside of the standard recovery limits. The exceedance is likely due to an unknown quantitative interference.
7. The letter has been amended. Rob Barrick is the correct contact for the analytical results.

Analytical Perspectives remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, do not hesitate to contact us. Thank you for choosing Analytical Perspectives as part of your analytical support team.

Sincerely,



Kimberly Mace, Ph.D.  
Project Manager

2714 EXCHANGE DRIVE  
WILMINGTON, NC 28405  
PH.: 910-794-1613

**P1789 - TEQ**  
**Project ID: Givaudan**

**Sample Summary**  
**Part 1 (dry weight)**



**Method 1613**

Analyte	0_7350_MB001	0_7350_MB001	SB9-12	SB13-12	SB6-6
	pg/g	pg/g	pg/g	pg/g	pg/g
2,3,7,8-TCDD	(0.128)	(0.144)	2910	6170	799
1,2,3,7,8-PeCDD	(0.0676)	(0.258)	1270	4090	42.1
1,2,3,4,7,8-HxCDD	(0.281)	(0.22)	546	2080	8.73
1,2,3,6,7,8-HxCDD	(0.3)	(0.223)	662	2550	23.7
1,2,3,7,8,9-HxCDD	(0.318)	(0.245)	492	1570	14.8
1,2,3,4,6,7,8-HpCDD	(0.15)	(0.0838)	1300	7710	51.9
OCDD	(0.163)	(0.435)	2180	9320	517
2,3,7,8-TCDF	(0.112)	(0.122)	42.9	106	13.2
1,2,3,7,8-PeCDF	(0.16)	(0.34)	26.9	86.3	1.74
2,3,4,7,8-PeCDF	(0.168)	(0.35)	63.4	197	7.43
1,2,3,4,7,8-HxCDF	(0.0904)	(0.375)	52.8	186	[2.21]
1,2,3,6,7,8-HxCDF	(0.0866)	(0.347)	45.5	154	4.35
2,3,4,6,7,8-HxCDF	(0.0996)	(0.403)	224	237	128
1,2,3,7,8,9-HxCDF	(0.129)	(0.503)	9.04	16.4	1.25
1,2,3,4,6,7,8-HpCDF	(0.0984)	(0.121)	211	656	16.4
1,2,3,4,7,8,9-HpCDF	(0.133)	(0.17)	23	62.3	1.46
OCDF	[0.299]	(0.621)	142	293	18.2
ITEF TEQ (ND=0; EMPC=0)	0.00	0.00	3,800	9,100	844
ITEF TEQ (ND=0; EMPC=EMPC)	0.000299	0.00	3,800	9,100	845
ITEF TEQ (ND=DL/2; EMPC=0)	0.20	0.357	3,800	9,100	844
ITEF TEQ (ND=DL/2; EMPC=EMPC)	0.20	0.357	3,800	9,100	845
ITEF TEQ (ND=DL; EMPC=EMPC)	0.40	0.714	3,800	9,100	845
Checkcode	2465	5581	3453	3812	4098
Lab ID	MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1789_7350_004CU	P1789_7350_009CU	P1789_7350_011

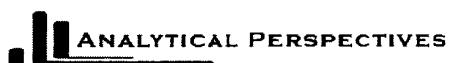
( ) = DL  
[ ] = EMPC

Reviewer : KAM  
Date : 14 Dec 09

GIV\_NBC\_0319569

P1789 - TEQ  
Project ID: Givaudan

**Sample Summary**  
**Part 1 (wet weight)**



**Method 1613**

Analyte	0_7350_MB001	0_7350_MB001	SB9-12	SB13-12	SB6-6
	pg/g	pg/g	pg/g	pg/g	pg/g
2,3,7,8-TCDD	(0.128)	(0.144)	2630	5660	738
1,2,3,7,8-PeCDD	(0.0676)	(0.258)	1150	3750	38.9
1,2,3,4,7,8-HxCDD	(0.281)	(0.22)	495	1910	8.07
1,2,3,6,7,8-HxCDD	(0.3)	(0.223)	599	2330	21.9
1,2,3,7,8,9-HxCDD	(0.318)	(0.245)	445	1440	13.7
1,2,3,4,6,7,8-HpCDD	(0.15)	(0.0838)	1180	7060	48
OCDD	(0.163)	(0.435)	1980	8540	478
2,3,7,8-TCDF	(0.112)	(0.122)	38.8	97.3	12.2
1,2,3,7,8-PeCDF	(0.16)	(0.34)	24.4	79	1.61
2,3,4,7,8-PeCDF	(0.168)	(0.35)	57.5	180	6.86
1,2,3,4,7,8-HxCDF	(0.0904)	(0.375)	47.9	170	[2.04]
1,2,3,6,7,8-HxCDF	(0.0866)	(0.347)	41.3	141	4.02
2,3,4,6,7,8-HxCDF	(0.0996)	(0.403)	203	217	118
1,2,3,7,8,9-HxCDF	(0.129)	(0.503)	8.19	15	1.16
1,2,3,4,6,7,8-HpCDF	(0.0984)	(0.121)	191	601	15.2
1,2,3,4,7,8,9-HpCDF	(0.133)	(0.17)	20.9	57.1	1.35
OCDF	[0.299]	(0.621)	129	269	16.9
ITEF TEQ (ND=0; EMPC=0)	0	0	3440	8340	780
ITEF TEQ (ND=0; EMPC=EMPC)	0.000299	0	3440	8340	780
ITEF TEQ (ND=DL/2; EMPC=0)	0.2	0.357	3440	8340	780
ITEF TEQ (ND=DL/2; EMPC=EMPC)	0.2	0.357	3440	8340	780
ITEF TEQ (ND=DL; EMPC=EMPC)	0.4	0.714	3440	8340	780
Checkcode	2465	5581	3453	3812	4098
Lab ID	MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1789_7350_004CU	P1789_7350_009CU	P1789_7350_011

( ) = DL  
[ ] = EMPC

Reviewer KAM  
Date 14 Dec 09

GIV\_NBC\_0319570

**P1789 - WHO 2005 TEF-TEQ**  
**Project ID: Givaudan**

<b>Sample Summary</b> <b>Part 1 (dry weight)</b>		<b>ANALYTICAL PERSPECTIVES</b>			<b>Method 1613</b>	
<b>Analyte</b>		<b>0_7350_MB001</b>	<b>0_7350_MB001</b>	<b>SB9-12</b>	<b>SB13-12</b>	<b>SB6-6</b>
		pg/g	pg/g	pg/g	pg/g	pg/g
2,3,7,8-TCDD		(0.128)	(0.144)	2910	6170	799
1,2,3,7,8-PeCDD		(0.0676)	(0.258)	1270	4090	42.1
1,2,3,4,7,8-HxCDD		(0.281)	(0.22)	546	2080	8.73
1,2,3,6,7,8-HxCDD		(0.3)	(0.223)	662	2550	23.7
1,2,3,7,8,9-HxCDD		(0.318)	(0.245)	492	1570	14.8
1,2,3,4,6,7,8-HpCDD		(0.15)	(0.0838)	1300	7710	51.9
OCDD		(0.163)	(0.435)	2180	9320	517
2,3,7,8-TCDF		(0.112)	(0.122)	42.9	106	13.2
1,2,3,7,8-PeCDF		(0.16)	(0.34)	26.9	86.3	1.74
2,3,4,7,8-PeCDF		(0.168)	(0.35)	63.4	197	7.43
1,2,3,4,7,8-HxCDF		(0.0904)	(0.375)	52.8	186	[2.21]
1,2,3,6,7,8-HxCDF		(0.0866)	(0.347)	45.5	154	4.35
2,3,4,6,7,8-HxCDF		(0.0996)	(0.403)	224	237	128
1,2,3,7,8,9-HxCDF		(0.129)	(0.503)	9.04	16.4	1.25
1,2,3,4,6,7,8-HpCDF		(0.0984)	(0.121)	211	656	16.4
1,2,3,4,7,8,9-HpCDF		(0.133)	(0.17)	23	62.3	1.46
OCDF		[0.299]	(0.621)	142	293	18.2
WHO 2005 TEF TEQ (ND=0; EMPC=0)		0	0	4420	11100	863
WHO 2005 TEF TEQ (ND=0; EMPC=EMPC)		0.0000896	0	4420	11100	864
WHO 2005 TEF TEQ (ND=DL/2; EMPC=0)		0.198	0.383	4420	11100	864
WHO 2005 TEF TEQ (ND=DL/2; EMPC=EMPC)		0.198	0.383	4420	11100	864
WHO 2005 TEF TEQ (ND=DL; EMPC=EMPC)		0.396	0.765	4420	11100	864
Checkcode		2465	5581	3453	3812	4098
Lab ID		MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1789_7350_004CU	P1789_7350_009CU	P1789_7350_011

( ) = DL  
[ ] = EMPC

Reviewer: KAM  
Date: 14 Dec 09

GIV\_NBC\_0319571

**P1789 - Totals**  
**Project ID: Givaudan**

**Sample Summary**  
**Part 2 (dry weight)**



**Method 1613**

Analyte	0_7350_MB001 pg/g	0_7350_MB001 pg/g	SB9-12 pg/g	SB13-12 pg/g	SB6-6 pg/g
<b>Totals</b>					
TCDDs	0	0	3850	8980	918
PeCDDs	0	0	4820	14900	149
HxCDDs	0	0	5750	19900	215
HpCDDs	0	0	2650	12500	107
OCDD	0	0	2180	9320	517
TCDFs	0	0	1390	2960	406
PeCDFs	0	0	1890	2870	1200
HxCDFs	0	0	13400	8720	9400
HpCDFs	0	0	420	1070	55.1
OCDF	0	0	142	293	18.2
Total PCDD/Fs (ND=0; EMPC=0)	0.00	0.00	36,500	81,500	13,000
Total PCDD/Fs (ND=0; EMPC=EMPC)	0.299	0.00	37,200	82,600	13,000
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)	2.78	4.96	37,200	82,600	13,000
Total 2378s (ND=0; EMPC=0)	0.00	0.00	10,200	35,500	1,650
Total 2378s (ND=0.5; EMPC=0)	1.28	2.48	10,200	35,500	1,650
Total 2378s (ND=1; EMPC=0)	2.57	4.96	10,200	35,500	1,650
Total 2378s (ND=0; EMPC=1)	0.299	0.00	10,200	35,500	1,650
Total 2378s (ND=0.5; EMPC=1)	1.54	2.48	10,200	35,500	1,650
Total 2378s (ND=1; EMPC=1)	2.78	4.96	10,200	35,500	1,650
Checkcode	2465	5581	3453	3812	4098
Lab ID	MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1789_7350_004CU	P1789_7350_009CU	P1789_7350_011

( ) = DL  
[ ] = EMPC

Reviewer: KAM  
Date: 14 Dec 09

GIV\_NBC\_0319572

**P1789 - Totals**  
**Project ID: Givaudan**

**Sample Summary**  
**Part 2 (wet weight)**



**Method 1613**

Analyte	0_7350_MB001 pg/g	0_7350_MB001 pg/g	SB9-12 pg/g	SB13-12 pg/g	SB6-6 pg/g
<b>Totals</b>					
TCDDs	0	0	3490	8220	849
PeCDDs	0	0	4370	13600	137
HxCDDs	0	0	5210	18300	198
HpCDDs	0	0	2400	11500	98.8
OCDD	0	0	1980	8540	478
TCDFs	0	0	1260	2710	375
PeCDFs	0	0	1710	2630	1110
HxCDFs	0	0	12100	7990	8690
HpCDFs	0	0	380	979	51
OCDF	0	0	129	269	16.9
Total PCDD/Fs (ND=0; EMPC=0)	0	0	33100	74700	12000
Total PCDD/Fs (ND=0; EMPC=EMPC)	0.299	0	33700	75700	12000
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)	2.78	4.96	33700	75700	12000
Total 2378s (ND=0; EMPC=0)	0	0	9240	32500	1520
Total 2378s (ND=0.5; EMPC=0)	1.28	2.48	9240	32500	1520
Total 2378s (ND=1; EMPC=0)	2.57	4.96	9240	32500	1520
Total 2378s (ND=0; EMPC=1)	0.299	0	9240	32500	1530
Total 2378s (ND=0.5; EMPC=1)	1.54	2.48	9240	32500	1530
Total 2378s (ND=1; EMPC=1)	2.78	4.96	9240	32500	1530
Checkcode	2465	5581	3453	3812	4098
Lab ID	MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1789_7350_004CU	P1789_7350_009CU	P1789_7350_011

( ) = DL

[ ] = EMPC

Reviewer  
Date

KAM  
14 Dec 09

GIV\_NBC\_0319573

**P1789 - Others**  
**Project ID: Givaudan**

<b>Sample Summary</b> <b>Part 3 (dry weight)</b>		<b>ANALYTICAL PERSPECTIVES</b>			<b>Method 1613</b>	
<b>Analyte</b>		<b>0_7350_MB001</b>	<b>0_7350_MB001</b>	<b>SB9-12</b>	<b>SB13-12</b>	<b>SB6-6</b>
		<b>pg/g</b>	<b>pg/g</b>	<b>pg/g</b>	<b>pg/g</b>	<b>pg/g</b>
<b>Other PCDD/Fs (ND=0, EMPC=0)</b>						
Other TCDD		0	0	947	2800	120
Other PeCDD		0	0	3550	10800	107
Other HxCDD		0	0	4050	13700	168
Other HpCDD		0	0	1350	4790	55
Other TCDF		0	0	1350	2850	393
Other PeCDF		0	0	1800	2590	1190
Other HxCDF		0	0	13100	8120	9270
Other HpCDF		0	0	186	351	37.2
<b>Other PCDD/Fs (ND=0, EMPC=EMPC)</b>						
Other TCDD		0	0	947	2800	122
Other PeCDD		0	0	3550	10800	119
Other HxCDD		0	0	4050	13900	172
Other HpCDD		0	0	1350	4790	55
Other TCDF		0	0	1350	2990	395
Other PeCDF		0	0	2530	3390	1200
Other HxCDF		0	0	13100	8140	9270
Other HpCDF		0	0	186	351	37.2
Checkcode	2465	5581	3453	3812	4098	
Lab ID	MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1789_7350_004CU	P1789_7350_009CU	P1789_7350_011	

( ) = DL  
[ ] = EMPC

Reviewer  
Date

KAM  
14 Dec 09

GIV\_NBC\_0319574

P1789 - DLs  
Project ID: Givaudan

Sample Summary Part 5 (dry weight)		ANALYTICAL PERSPECTIVES				Method 1613	
Analyte		0_7350_MB001	0_7350_MB001	SB9-12	SB13-12	SB6-6	
		pg/g	pg/g	pg/g	pg/g	pg/g	
2,3,7,8-TCDD		0.128	0.144	0.369	0.234	0.368	
1,2,3,7,8-PeCDD		0.0676	0.258	0.878	1.02	0.484	
1,2,3,4,7,8-HxCDD		0.281	0.22	0.422	1.15	0.853	
1,2,3,6,7,8-HxCDD		0.3	0.223	0.443	1.24	0.813	
1,2,3,7,8,9-HxCDD		0.318	0.245	0.506	1.5	0.918	
1,2,3,4,6,7,8-HpCDD		0.15	0.0838	3.07	8.26	0.909	
OCDD		0.163	0.435	0.286	0.657	0.188	
2,3,7,8-TCDF		0.112	0.122	0.307	0.91	0.355	
1,2,3,7,8-PeCDF		0.16	0.34	1.03	1.63	0.597	
2,3,4,7,8-PeCDF		0.168	0.35	1.04	1.65	0.57	
1,2,3,4,7,8-HxCDF		0.0904	0.375	2.55	2.11	0.279	
1,2,3,6,7,8-HxCDF		0.0866	0.347	2.35	2.06	0.263	
2,3,4,6,7,8-HxCDF		0.0996	0.403	2.63	2.45	0.293	
1,2,3,7,8,9-HxCDF		0.129	0.503	2.19	1.36	0.341	
1,2,3,4,6,7,8-HpCDF		0.0984	0.121	0.442	0.709	0.202	
1,2,3,4,7,8,9-HpCDF		0.133	0.17	0.631	0.935	0.293	
OCDF		0.0809	0.621	0.66	0.437	0.371	
Total TCDD		0.128	0.144	0.369	0.234	0.368	
Total PeCDD		0.0676	0.258	0.878	1.02	0.484	
Total HxCDD		0.3	0.229	0.457	1.3	0.86	
Total HpCDD		0.15	0.0838	3.07	8.26	0.909	
Total TCDF		0.112	0.122	0.307	0.91	0.355	
Total PeCDF		0.164	0.345	1.03	1.64	0.584	
Total HxCDF		0.0994	0.402	2.4	1.8	0.292	
Total HpCDF		0.115	0.143	0.529	0.817	0.244	
Checkcode		2465	5581	3453	3812	4098	
Lab ID		MB1_7350_DF_SDSDS	MB1_7350_DF_SDSCU	P1789_7350_004CU	P1789_7350_009CU	P1789_7350_011	

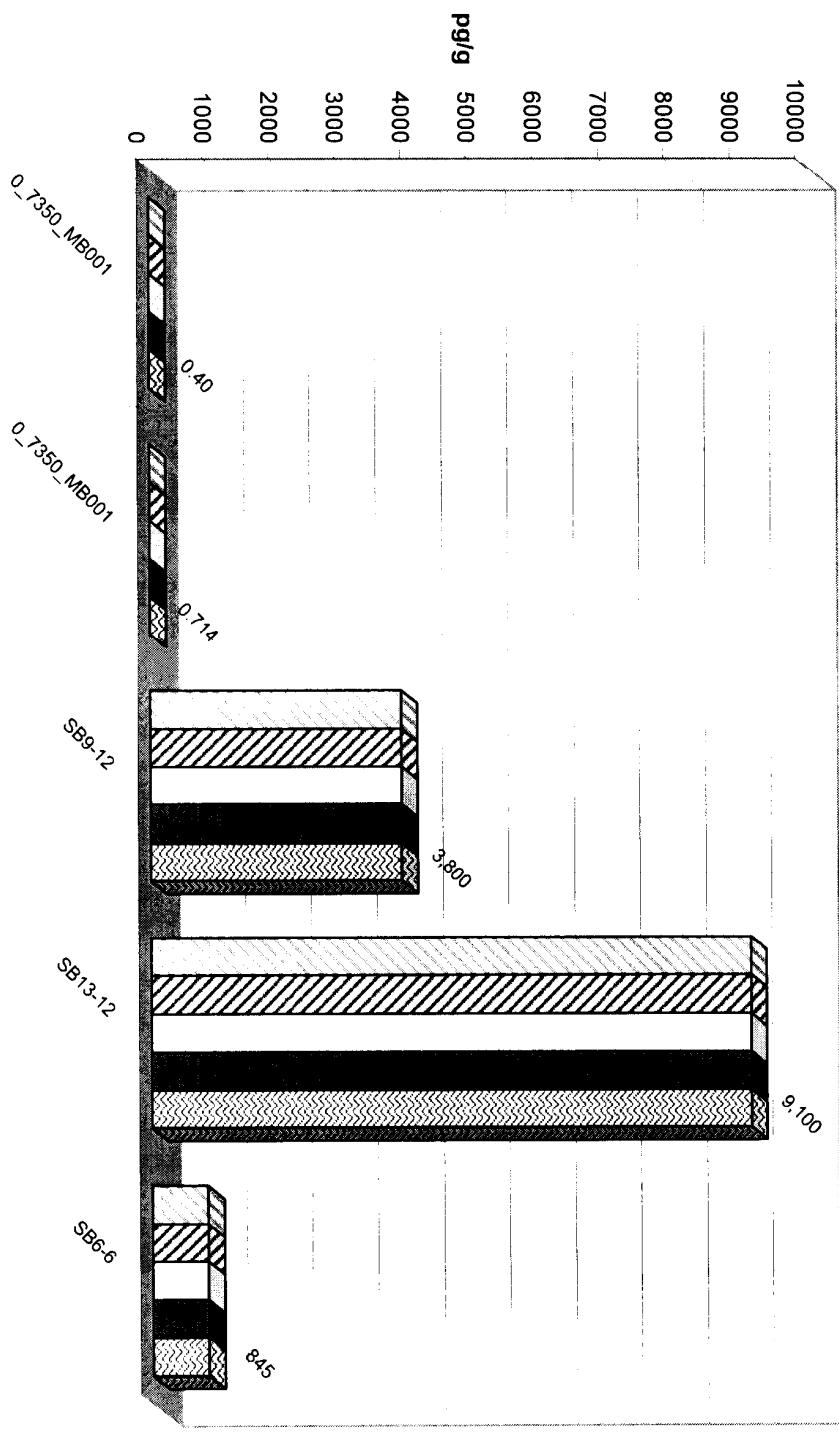
Reviewer: KAM  
Date: 14 Dec 09

GIV\_NBC\_0319575

# ITEF-TEQ

Project ID: Givaudan  
P1789

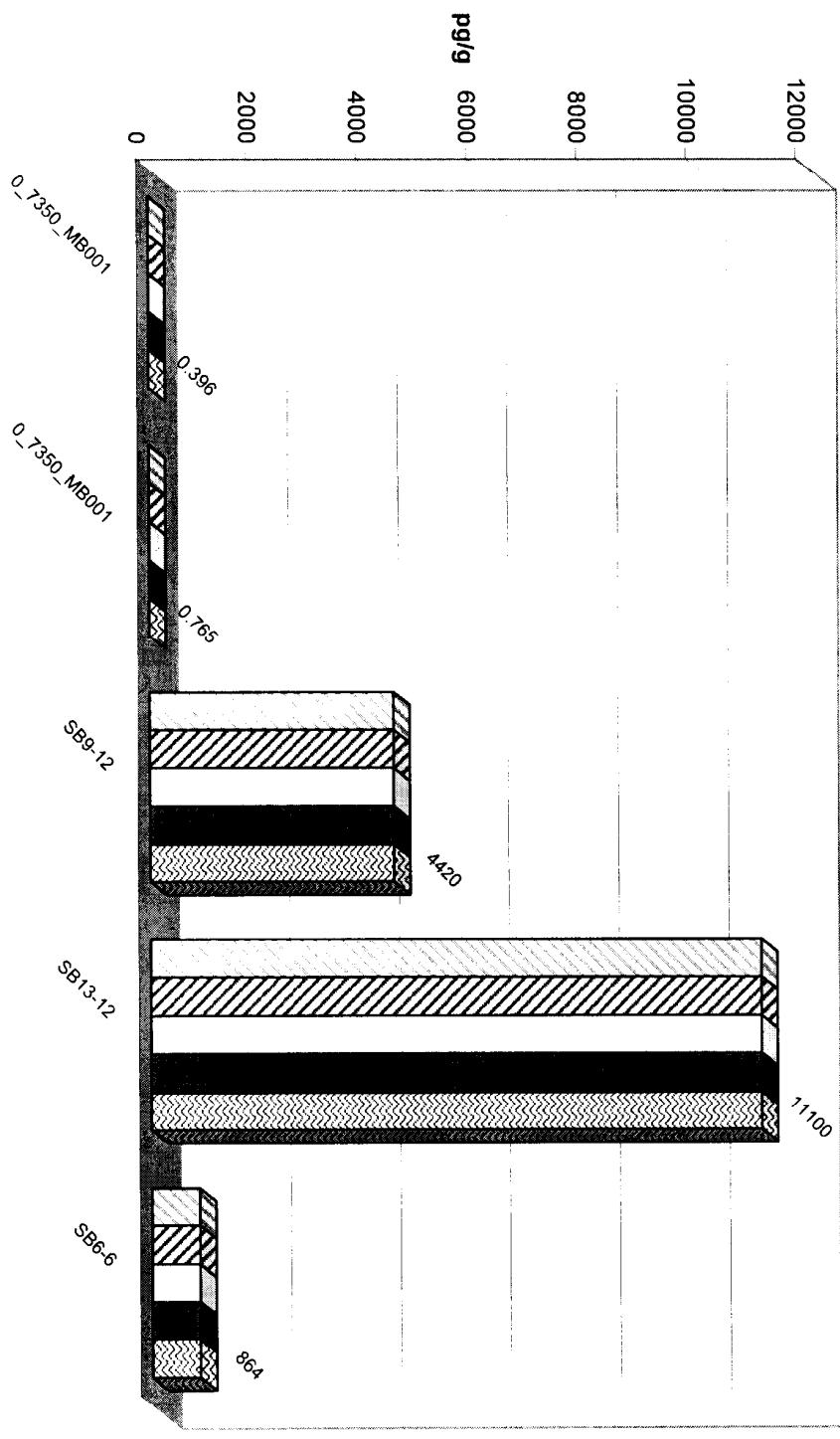
- ND=0; EMPC=0
- ND=0; EMPC=EMPC
- ND=DL2; EMPC=0
- ND=DL2; EMPC=EMPC
- ND=DL; EMPC=EMPC



# WHO 2005 TEF-TEQ

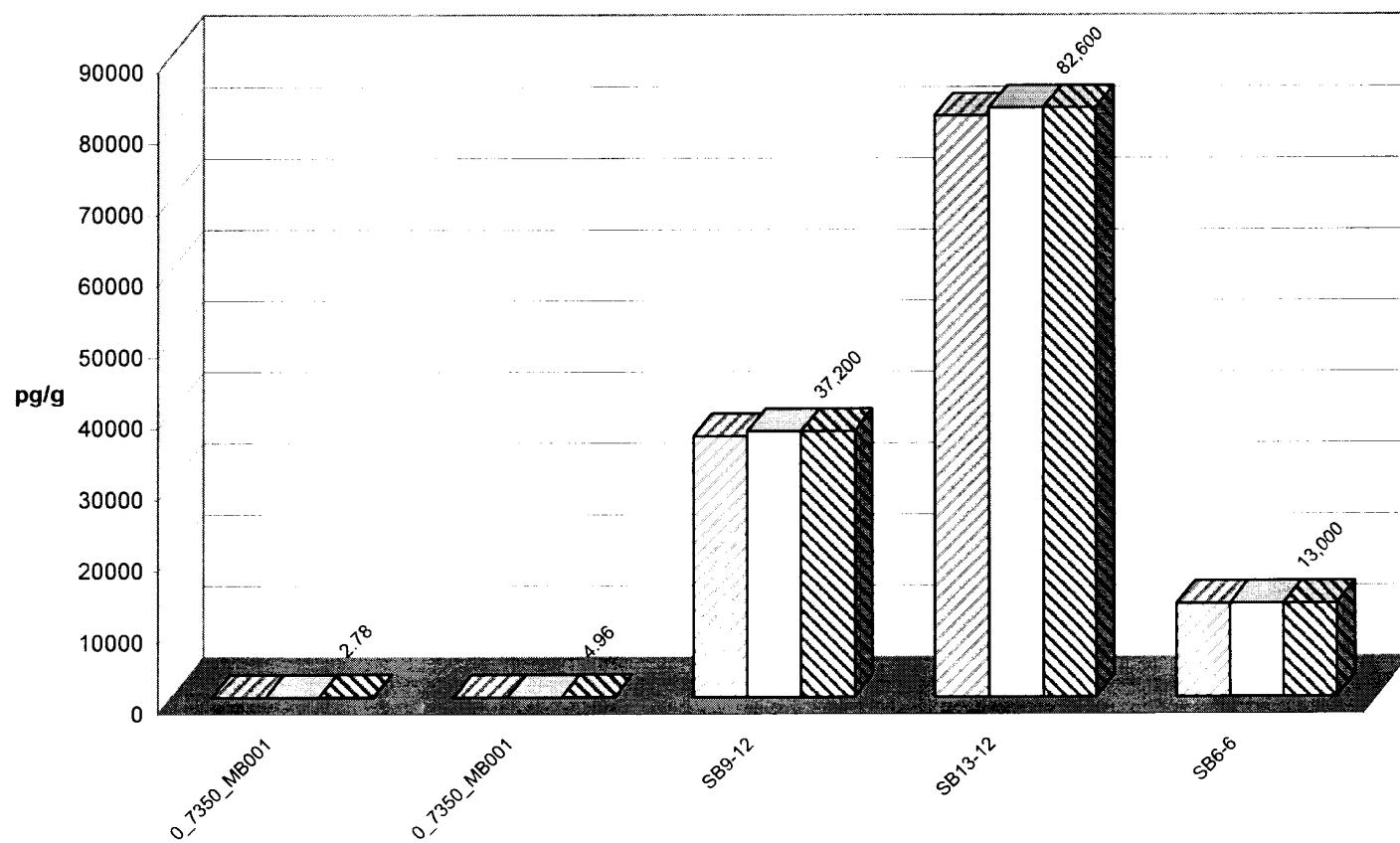
Project ID: Givaudan  
P1789

- ND=0; EMPC=0
- ND=0; EMPC=EMPC
- ND=DL/2; EMPC=0
- ND=DL/2; EMPC=EMPC
- ND=DL; EMPC=EMPC



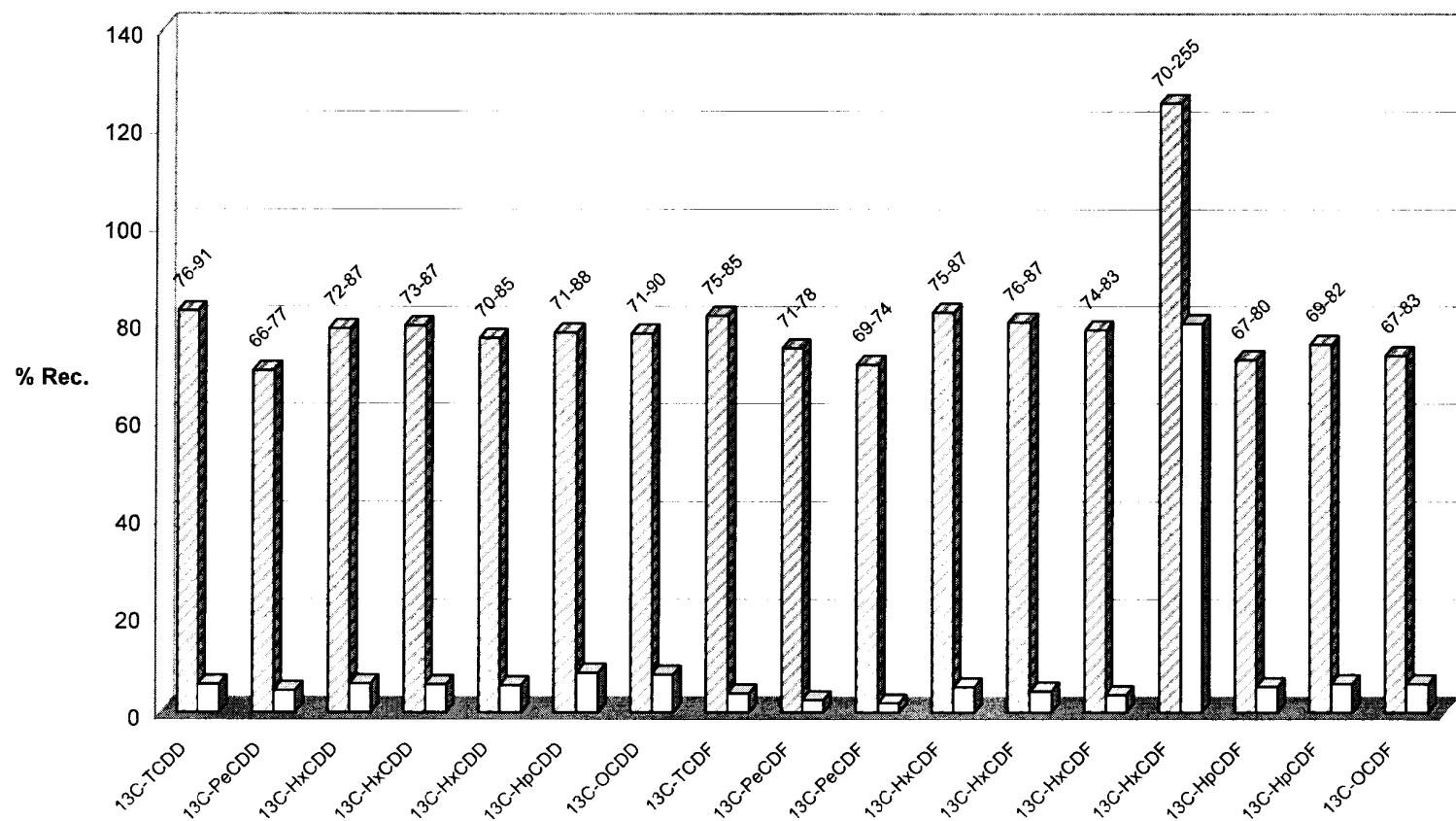
**Totals**  
Project ID: Givaudan  
P1789

- Total PCDD/Fs (ND=0; EMPC=0)
- Total PCDD/Fs (ND=0; EMPC=EMPC)
- Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)



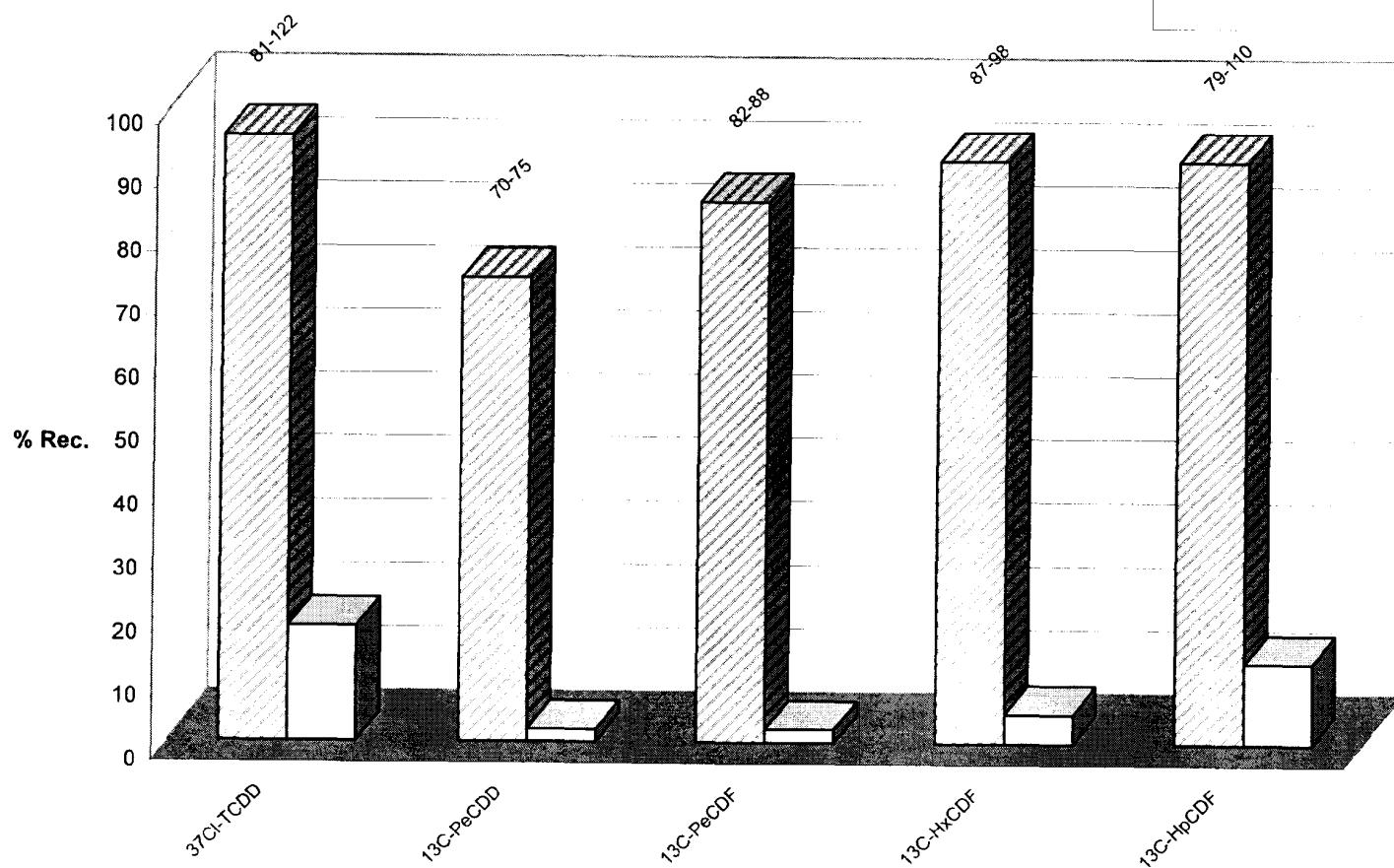
**Mean Recoveries of Extraction Standards (N=5)**  
**Project ID: Givaudan**  
**P1789**

Mean Std. Dev.

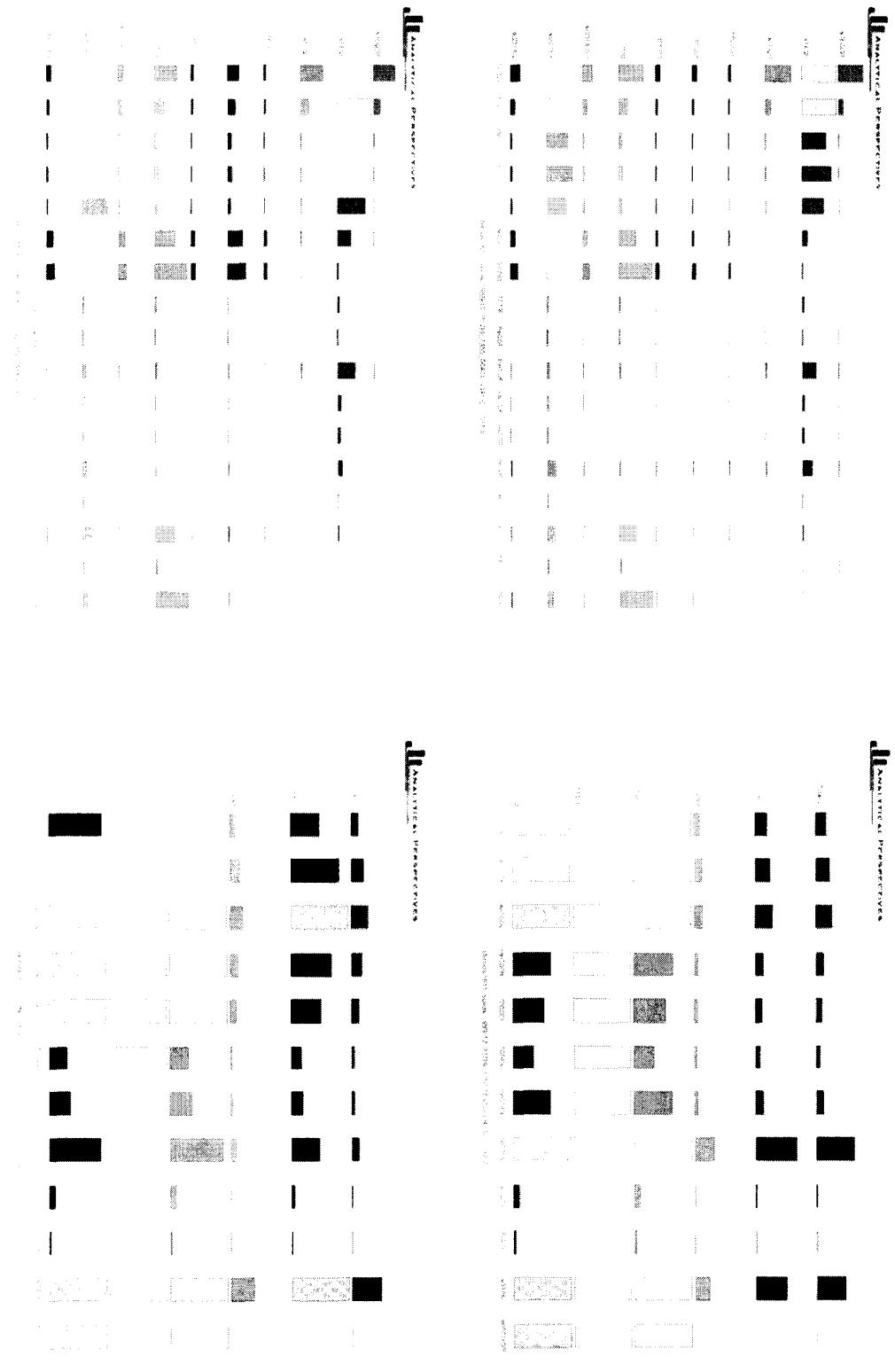


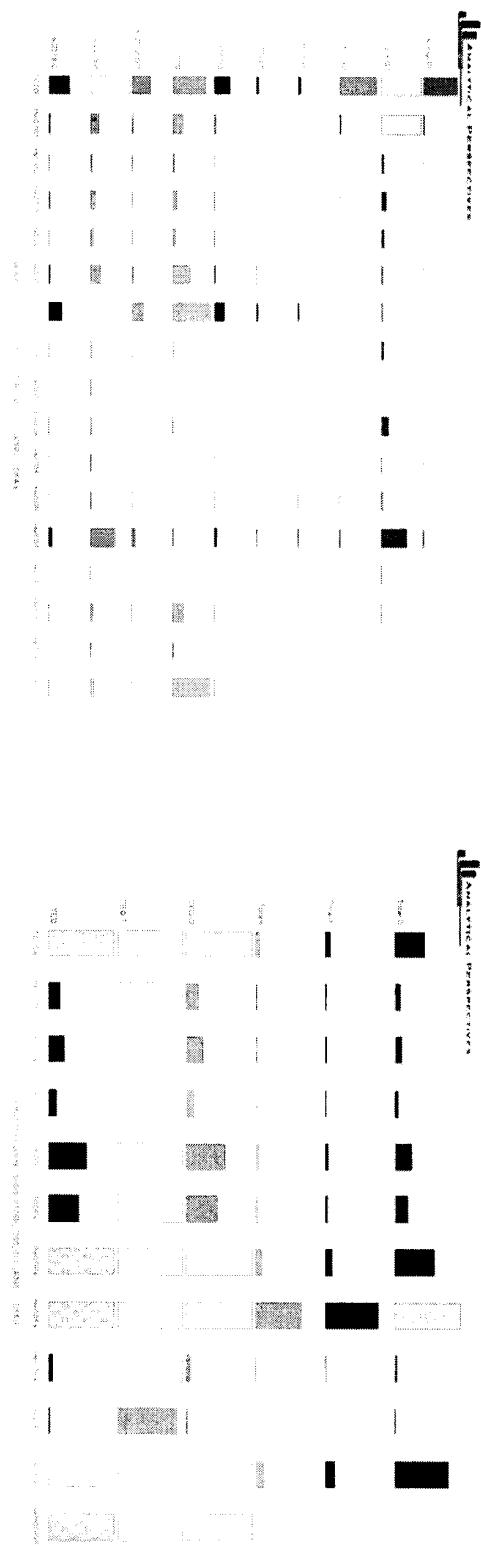
**Mean Recoveries of Clean-Up Standards (N=5)**  
**Project ID: Givaudan**  
**P1789**

□ Mean      □ Std. Dev.









**Sample ID: 0\_7350\_MB001****Method 1613**

<u>Client Data</u>		<u>Sample Data</u>		<u>Laboratory Data</u>			
Name:	Entrix	Matrix:	Solids	Project No.:	P1789	Date Received:	n/a
Project ID:	Givaudan	Weight/Volume:	11.00 g	Sample ID:	MB1_7350_DF_SDS	Date Extracted:	23 Nov 2009
Date Collected:	n/a	% Solids:	n/a	QC Batch No.:	7350	Date Analyzed:	04 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	17:18:08
<b>Analyte</b>	<b>Conc. (pg/g)</b>	<b>DL (pg/g)</b>	<b>EMPC (pg/g)</b>	<b>Qualifiers</b>	<b>Standard</b>	<b>ES Recoveries</b>	<b>Qualifiers</b>
2,3,7,8-TCDD	ND	0.128			13C-2,3,7,8-TCDD	79.9	
1,2,3,7,8-PeCDD	ND	0.0676			13C-1,2,3,7,8-PeCDD	66.4	
1,2,3,4,7,8-HxCDD	ND	0.281			13C-1,2,3,4,7,8-HxCDD	78	
1,2,3,6,7,8-HxCDD	ND	0.3			13C-1,2,3,6,7,8-HxCDD	79.5	
1,2,3,7,8,9-HxCDD	ND	0.318			13C-1,2,3,7,8,9-HxCDD	76.6	
1,2,3,4,6,7,8-HpCDD	ND	0.15			13C-1,2,3,4,6,7,8-HpCDD	72.7	
OCDD	ND	0.163			13C-OCDD	72.1	
2,3,7,8-TCDF	ND	0.112			13C-2,3,7,8-TCDF	81.6	
1,2,3,7,8-PeCDF	ND	0.16			13C-1,2,3,7,8-PeCDF	73.6	
2,3,4,7,8-PeCDF	ND	0.168			13C-2,3,4,7,8-PeCDF	70.4	
1,2,3,4,7,8-HxCDF	ND	0.0904			13C-1,2,3,4,7,8-HxCDF	86.5	
1,2,3,6,7,8-HxCDF	ND	0.0866			13C-1,2,3,6,7,8-HxCDF	86.6	
2,3,4,6,7,8-HxCDF	ND	0.0996			13C-2,3,4,6,7,8-HxCDF	83	
1,2,3,7,8,9-HxCDF	ND	0.129			13C-1,2,3,7,8,9-HxCDF	74.9	
1,2,3,4,6,7,8-HpCDF	ND	0.0984			13C-1,2,3,4,6,7,8-HpCDF	70.6	
1,2,3,4,7,8,9-HpCDF	ND	0.133			13C-1,2,3,4,7,8,9-HpCDF	74.2	
OCDF	EMPC		0.299	J	13C-OCDF	73.2	
<b>Totals</b>					<b>CS Recoveries</b>		
TCDDs	ND	0.128			37Cl-2,3,7,8-TCDD	81.2	
PeCDDs	ND	0.0676			13C-1,2,3,4,7-PeCDD	70.1	
HxCDDs	ND	0.3			13C-1,2,3,4,6-PeCDF	84	
HpCDDs	ND	0.15			13C-1,2,3,4,6,9-HxCDF	98.2	
TCDFs	ND	0.112			13C-1,2,3,4,6,8,9-HpCDF	84.9	
PeCDFs	ND	0.164					
HxCDFs	ND	0.0994			13C-1,3,6,8-TCDD	104	
HpCDFs	ND	0.115			13C-1,3,6,8-TCDF	106	
<b>Total PCDD/Fs</b>	<b>0</b>		<b>0.299</b>		2714 Exchange Drive Wilmington, NC 28405 USA		
<b>ITEF TEQs</b>					 ANALYTICAL PERSPECTIVES Tel: +1 910 794-1613, Toll-Free 866 846-8290 Fax: +1 910 794-3919		
TEQ: ND=0	0		0.000299		info@ultratrace.com www.ultratrace.com		
TEQ: ND=DL/2	0.2		0.2				
TEQ: ND=DL	0.4		0.4				

Checkcode: 2465

AP D/F 2009 Rev. J

Reviewer  
DateKAM  
14 Dec 09

GIV\_NBC\_0319584

**Sample ID: 0\_7350\_MB001****Method 1613**

<u>Client Data</u>		<u>Sample Data</u>		<u>Laboratory Data</u>			
Name:	Entrix	Matrix:	Solids	Project No.:	P1789	Date Received:	n/a
Project ID:	Givaudan	Weight/Volume:	10.00 g	Sample ID:	MB1_7350_DF_SDSCU	Date Extracted:	23 Nov 2009
Date Collected:	n/a	% Solids:	n/a	QC Batch No.:	7350	Date Analyzed:	10 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	12:54:16
<b>Analyte</b>	<b>Conc. (pg/g)</b>	<b>DL (pg/g)</b>	<b>EMPC (pg/g)</b>	<b>Qualifiers</b>	<b>Standard</b>	<b>ES Recoveries</b>	<b>Qualifiers</b>
2,3,7,8-TCDD	ND	0.144			13C-2,3,7,8-TCDD	80.2	
1,2,3,7,8-PeCDD	ND	0.258			13C-1,2,3,7,8-PeCDD	68.6	
1,2,3,4,7,8-HxCDD	ND	0.22			13C-1,2,3,4,7,8-HxCDD	74.9	
1,2,3,6,7,8-HxCDD	ND	0.223			13C-1,2,3,6,7,8-HxCDD	74.8	
1,2,3,7,8,9-HxCDD	ND	0.245			13C-1,2,3,7,8,9-HxCDD	72.7	
1,2,3,4,6,7,8-HpCDD	ND	0.0838			13C-1,2,3,4,6,7,8-HpCDD	71.7	
OCDD	ND	0.435			13C-OCDD	70.7	
2,3,7,8-TCDF	ND	0.122			13C-2,3,7,8-TCDF	80.9	
1,2,3,7,8-PeCDF	ND	0.34			13C-1,2,3,7,8-PeCDF	75.5	
2,3,4,7,8-PeCDF	ND	0.35			13C-2,3,4,7,8-PeCDF	71	
1,2,3,4,7,8-HxCDF	ND	0.375			13C-1,2,3,4,7,8-HxCDF	75.2	
1,2,3,6,7,8-HxCDF	ND	0.347			13C-1,2,3,6,7,8-HxCDF	75.9	
2,3,4,6,7,8-HxCDF	ND	0.403			13C-2,3,4,6,7,8-HxCDF	75.7	
1,2,3,7,8,9-HxCDF	ND	0.503			13C-1,2,3,7,8,9-HxCDF	70.3	
1,2,3,4,6,7,8-HpCDF	ND	0.121			13C-1,2,3,4,6,7,8-HpCDF	67.1	
1,2,3,4,7,8,9-HpCDF	ND	0.17			13C-1,2,3,4,7,8,9-HpCDF	68.7	
OCDF	ND	0.621			13C-OCDF	66.7	
<b>Totals</b>					<b>CS Recoveries</b>		
TCDDs	ND	0.144			37Cl-2,3,7,8-TCDD	84.1	
PeCDDs	ND	0.258			13C-1,2,3,4,7-PeCDD	72.2	
HxCDDs	ND	0.229			13C-1,2,3,4,6-PeCDF	85.7	
HpCDDs	ND	0.0838			13C-1,2,3,4,6,9-HxCDF	87.9	
					13C-1,2,3,4,6,8,9-HpCDF	79	
TCDFs	ND	0.122					<b>AS Recoveries</b>
PeCDFs	ND	0.345			13C-1,3,6,8-TCDD	102	
HxCDFs	ND	0.402			13C-1,3,6,8-TCDF	110	
HpCDFs	ND	0.143					
<b>Total PCDD/Fs</b>	<b>0</b>		<b>0</b>		2714 Exchange Drive Wilmington, NC 28405 USA		
<b>ITEF TEQs</b>					 ANALYTICAL PERSPECTIVES Tel: +1 910 794-1613; Toll-Free 866 846-8290 Fax: +1 910 794-3919		
TEQ: ND=0	0		0		info@ultratrace.com www.ultratrace.com		
TEQ: ND=DL/2	0.357		0.357				
TEQ: ND=DL	0.714		0.714				

Checkcode 5581

AP D/F 2009 Rev. J

Reviewer  
DateKAM  
14 Dec 09

GIV\_NBC\_0319585

**Sample ID: 0\_7350\_OPR001****Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Entrix	Matrix:	Solids	Project No.:	P1789	Date Received:	n/a
Project ID:	Givaudan	Weight/Volume:	1.00 g	Sample ID:	OPR1_7350_DF	Date Extracted:	23 Nov 2009
Date Collected:	n/a	% Solids:	n/a	QC Batch No.:	7350	Date Analyzed:	04 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	14:46:50
Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	10.1	[Ra=0.788]			13C-2,3,7,8-TCDD	77	
1,2,3,7,8-PeCDD	53.6				13C-1,2,3,7,8-PeCDD	66.2	
1,2,3,4,7,8-HxCDD	50.2				13C-1,2,3,4,7,8-HxCDD	76.7	
1,2,3,6,7,8-HxCDD	51.2				13C-1,2,3,6,7,8-HxCDD	79.8	
1,2,3,7,8,9-HxCDD	47.7				13C-1,2,3,7,8,9-HxCDD	79.9	
1,2,3,4,6,7,8-HpCDD	51.9				13C-1,2,3,4,6,7,8-HpCDD	68.7	
OCDD	107				13C-OCDD	72.5	
2,3,7,8-TCDF	10.8				13C-2,3,7,8-TCDF	79.4	
1,2,3,7,8-PeCDF	49.4				13C-1,2,3,7,8-PeCDF	72.9	
2,3,4,7,8-PeCDF	52.5				13C-2,3,4,7,8-PeCDF	69.7	
1,2,3,4,7,8-HxCDF	50.2				13C-1,2,3,4,7,8-HxCDF	84.3	
1,2,3,6,7,8-HxCDF	51.3				13C-1,2,3,6,7,8-HxCDF	84.1	
2,3,4,6,7,8-HxCDF	51.8				13C-2,3,4,6,7,8-HxCDF	81.1	
1,2,3,7,8,9-HxCDF	50				13C-1,2,3,7,8,9-HxCDF	76.8	
1,2,3,4,6,7,8-HpCDF	52.5				13C-1,2,3,4,6,7,8-HpCDF	71.4	
1,2,3,4,7,8,9-HpCDF	50.3				13C-1,2,3,4,7,8,9-HpCDF	72.5	
OCDF	104				13C-OCDF	72.7	
<b>Totals</b>					<b>CS Recoveries</b>		
TCDDs	43.9		44.1		37CI-2,3,7,8-TCDD	77.4	
PeCDDs	78.4		78.8		13C-1,2,3,4,7-PeCDD	68.2	
HxCDDs	161		161		13C-1,2,3,4,6-PeCDF	83.9	
HpCDDs	64.1		64.5		13C-1,2,3,4,6,9-HxCDF	95.5	
TCDFs	46.3		46.7		13C-1,2,3,4,6,8,9-HpCDF	80.6	
PeCDFs	114		122				
HxCDFs	314				<b>AS Recoveries</b>		
HpCDFs	103		104		13C-1,3,6,8-TCDD	97.5	
<b>Total PCDD/Fs</b>	<b>1,140</b>		<b>1,150</b>		13C-1,3,6,8-TCDF	103	
<b>ITEF TEQs</b>							
TEQ: ND=0	104		104		 ANALYTICAL PERSPECTIVES	2714 Exchange Drive	
TEQ: ND=DL/2	104		104			Wilmington, NC 28405	
TEQ: ND=DL	104		104		Tel: +1 910 794-1613; Toll-Free 866 846-8290	USA	
					Fax: +1 910 794-3919	info@ultratrace.com	
						www.ultratrace.com	

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DateKAM  
14 Dec 09

GIV\_NBC\_0319586

**Sample ID: SB9-12****Method 1613**

<u>Client Data</u>		<u>Sample Data</u>		<u>Laboratory Data</u>			
Name:	Entrix	Matrix:	Solids	Project No.:	P1789	Date Received:	30 Oct 2009
Project ID:	Givaudan	Weight/Volume:	12.38 g	Sample ID:	P1789_7350_004CU	Date Extracted:	23 Nov 2009
Date Collected:	28 Oct 2009	% Solids:	90.6 %	QC Batch No.:	7350	Date Analyzed:	10 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	15:25:31
<b>Analyte</b>	<b>Conc. (pg/g)</b>	<b>DL (pg/g)</b>	<b>EMPC (pg/g)</b>	<b>Qualifiers</b>	<b>Standard</b>	<b>ES Recoveries</b>	<b>Qualifiers</b>
2,3,7,8-TCDD	2,910	[Ra=0.793]		*	13C-2,3,7,8-TCDD	85.4	
1,2,3,7,8-PeCDD	1,270				13C-1,2,3,7,8-PeCDD	72.7	
1,2,3,4,7,8-HxCDD	546				13C-1,2,3,4,7,8-HxCDD	81.6	
1,2,3,6,7,8-HxCDD	662				13C-1,2,3,6,7,8-HxCDD	83.1	
1,2,3,7,8,9-HxCDD	492				13C-1,2,3,7,8,9-HxCDD	79.1	
1,2,3,4,6,7,8-HpCDD	1,300				13C-1,2,3,4,6,7,8-HpCDD	85.8	
OCDD	2,180				13C-OCDD	89.5	
2,3,7,8-TCDF	42.9				13C-2,3,7,8-TCDF	84.6	
1,2,3,7,8-PeCDF	26.9				13C-1,2,3,7,8-PeCDF	77.5	
2,3,4,7,8-PeCDF	63.4				13C-2,3,4,7,8-PeCDF	74.1	
1,2,3,4,7,8-HxCDF	52.8				13C-1,2,3,4,7,8-HxCDF	82.9	
1,2,3,6,7,8-HxCDF	45.5				13C-1,2,3,6,7,8-HxCDF	78.6	
2,3,4,6,7,8-HxCDF	224				13C-2,3,4,6,7,8-HxCDF	81.1	
1,2,3,7,8,9-HxCDF	9.04				13C-1,2,3,7,8,9-HxCDF	149	> 147
1,2,3,4,6,7,8-HpCDF	211				13C-1,2,3,4,6,7,8-HpCDF	80.5	
1,2,3,4,7,8,9-HpCDF	23				13C-1,2,3,4,7,8,9-HpCDF	81.5	
OCDF	142				13C-OCDF	82.7	
<b>Totals</b>					<b>CS Recoveries</b>		
TCDDs	3,850				37CI-2,3,7,8-TCDD	106	
PeCDDs	4,820				13C-1,2,3,4,7-PeCDD	74.9	
HxCDDs	5,750				13C-1,2,3,4,6-PeCDF	88.1	
HpCDDs	2,650				13C-1,2,3,4,6,9-HxCDF	92.4	
TCDFs	1,390				13C-1,2,3,4,6,8,9-HpCDF	99.7	
PeCDFs	1,890						
HxCDFs	13,400		2,620				
HpCDFs	420						
<b>Total PCDD/Fs</b>	<b>36,500</b>		<b>37,200</b>		<b>AS Recoveries</b>		
ITEF TEQs					13C-1,3,6,8-TCDD	100	
TEQ: ND=0	3,800		3,800		13C-1,3,6,8-TCDF	109	
TEQ: ND=DL/2	3,800		3,800				
TEQ: ND=DL	3,800		3,800				

Checkcode: 3453



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KAM  
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**Sample ID: SB13-12****Method 1613**

<u>Client Data</u>		<u>Sample Data</u>	<u>Laboratory Data</u>			
Name:	Entrix	Matrix:	Solids	Project No.:	P1789	Date Received:
Project ID:	Givaudan	Weight/Volume:	11.04 g	Sample ID:	P1789_7350_009CU	Date Extracted:
Date Collected:	28 Oct 2009	% Solids:	91.6 %	QC Batch No.:	7350	Date Analyzed:
		Split:	-	Dilution:	-	Time Analyzed:
						16:15:56
<u>Analyte</u>	<u>Conc. (pg/g)</u>	<u>DL (pg/g)</u>	<u>EMPC (pg/g)</u>	<u>Qualifiers</u>	<u>Standard</u>	<u>ES Recoveries</u>
2,3,7,8-TCDD	6,170	[Ra=0.798]		*	13C-2,3,7,8-TCDD	90.8
1,2,3,7,8-PeCDD	4,090				13C-1,2,3,7,8-PeCDD	77
1,2,3,4,7,8-HxCDD	2,080				13C-1,2,3,4,7,8-HxCDD	87.3
1,2,3,6,7,8-HxCDD	2,550				13C-1,2,3,6,7,8-HxCDD	86.9
1,2,3,7,8,9-HxCDD	1,570				13C-1,2,3,7,8,9-HxCDD	84.9
1,2,3,4,6,7,8-HpCDD	7,710			*	13C-1,2,3,4,6,7,8-HpCDD	87.9
OCDD	9,320			*	13C-OCDD	81.7
2,3,7,8-TCDF	106				13C-2,3,7,8-TCDF	84.8
1,2,3,7,8-PeCDF	86.3				13C-1,2,3,7,8-PeCDF	76.1
2,3,4,7,8-PeCDF	197				13C-2,3,4,7,8-PeCDF	72.5
1,2,3,4,7,8-HxCDF	186				13C-1,2,3,4,7,8-HxCDF	87.4
1,2,3,6,7,8-HxCDF	154				13C-1,2,3,6,7,8-HxCDF	82.5
2,3,4,6,7,8-HxCDF	237				13C-2,3,4,6,7,8-HxCDF	78.2
1,2,3,7,8,9-HxCDF	16.4				13C-1,2,3,7,8,9-HxCDF	255
1,2,3,4,6,7,8-HpCDF	656				13C-1,2,3,4,6,7,8-HpCDF	74.8
1,2,3,4,7,8,9-HpCDF	62.3				13C-1,2,3,4,7,8,9-HpCDF	81.8
OCDF	293				13C-OCDF	70.2
<b>Totals</b>					<b>CS Recoveries</b>	
TCDDs	8,980				37CI-2,3,7,8-TCDD	122
PeCDDs	14,900				13C-1,2,3,4,7-PeCDD	74.1
HxCDDs	19,900		20,100		13C-1,2,3,4,6-PeCDF	85.2
HpCDDs	12,500				13C-1,2,3,4,6,9-HxCDF	93.6
TCDFs	2,960		3,100		13C-1,2,3,4,6,8,9-HpCDF	110
PeCDFs	2,870		3,670			
HxCDFs	8,720		8,730		<b>AS Recoveries</b>	97.4
HpCDFs	1,070					111
<b>Total PCDD/Fs</b>	<b>81,500</b>		<b>82,600</b>		2714 Exchange Drive	
<b>ITEF TEQs</b>					Wilmington, NC 28405	
TEQ: ND=0	9,100		9,100		USA	
TEQ: ND=DL/2	9,100		9,100		info@ultratrace.com	
TEQ: ND=DL	9,100		9,100		www.ultratrace.com	

Checkcode 3812



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Reviewer  
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GIV\_NBC\_0319588

**Sample ID: SB6-6****Method 1613**

<u>Client Data</u>		<u>Sample Data</u>	<u>Laboratory Data</u>				
Name:	Entrix	Matrix:	Solids	Project No.:	P1789	Date Received:	30 Oct 2009
Project ID:	Givaudan	Weight/Volume:	12.46 g	Sample ID:	P1789_7350_011	Date Extracted:	23 Nov 2009
Date Collected:	28 Oct 2009	% Solids:	92.4 %	QC Batch No.:	7350	Date Analyzed:	04 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	23:11:17
<b>Analyte</b>	<b>Conc. (pg/g)</b>	<b>DL (pg/g)</b>	<b>EMPC (pg/g)</b>	<b>Qualifiers</b>	<b>Standard</b>	<b>ES Recoveries</b>	<b>Qualifiers</b>
2,3,7,8-TCDD	799	[Ra=0.794]			13C-2,3,7,8-TCDD	75.5	
1,2,3,7,8-PeCDD	42.1				13C-1,2,3,7,8-PeCDD	66.1	
1,2,3,4,7,8-HxCDD	8.73				13C-1,2,3,4,7,8-HxCDD	71.8	
1,2,3,6,7,8-HxCDD	23.7				13C-1,2,3,6,7,8-HxCDD	72.7	
1,2,3,7,8,9-HxCDD	14.8				13C-1,2,3,7,8,9-HxCDD	70.4	
1,2,3,4,6,7,8-HpCDD	51.9				13C-1,2,3,4,6,7,8-HpCDD	71.3	
OCDD	517				13C-OCDD	74.7	
2,3,7,8-TCDF	13.2				13C-2,3,7,8-TCDF	74.9	
1,2,3,7,8-PeCDF	1.74			J	13C-1,2,3,7,8-PeCDF	70.7	
2,3,4,7,8-PeCDF	7.43				13C-2,3,4,7,8-PeCDF	69.1	
1,2,3,4,7,8-HxCDF	EMPC		2.21		13C-1,2,3,4,7,8-HxCDF	78.2	
1,2,3,6,7,8-HxCDF	4.35				13C-1,2,3,6,7,8-HxCDF	76.7	
2,3,4,6,7,8-HxCDF	128				13C-2,3,4,6,7,8-HxCDF	74.2	
1,2,3,7,8,9-HxCDF	1.25			J	13C-1,2,3,7,8,9-HxCDF	75.6	
1,2,3,4,6,7,8-HpCDF	16.4				13C-1,2,3,4,6,7,8-HpCDF	68.9	
1,2,3,4,7,8,9-HpCDF	1.46			J	13C-1,2,3,4,7,8,9-HpCDF	71.2	
OCDF	18.2				13C-OCDF	73.2	
<b>Totals</b>					<b>CS Recoveries</b>		
TCDDs	918		921		37CI-2,3,7,8-TCDD	83	
PeCDDs	149		161		13C-1,2,3,4,7-PeCDD	74	
HxCDDs	215		219		13C-1,2,3,4,6-PeCDF	82.5	
HpCDDs	107				13C-1,2,3,4,6,9-HxCDF	86.8	
TCDFs	406		408		13C-1,2,3,4,6,8,9-HpCDF	85.2	
PeCDFs	1,200		1,210				
HxCDFs	9,400		9,410		<b>AS Recoveries</b>		
HpCDFs	55.1				13C-1,3,6,8-TCDD	93	
<b>Total PCDD/Fs</b>	<b>13,000</b>		<b>13,000</b>		13C-1,3,6,8-TCDF	102	
<b>ITEF TEQs</b>							
TEQ: ND=0	844		845				
TEQ: ND=DL/2	844		845				
TEQ: ND=DL	844		845				

Checkcode: 4098



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14 Dec 09

GIV\_NBC\_0319589

# **PCDD/F Laboratory Report P1788**

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**APPENDIX C**

**ANALYTICAL PERSPECTIVES**

15 December 2009

Rob Barrick  
 Entrix, Inc.  
 200 First Ave W. Suite 200  
 Seattle, WA 98119

Telephone: 206.779.5339  
 Email: [rbarrick@entrix.com](mailto:rbarrick@entrix.com)

**Subject:** Certificate of Results - Amended

Dear Rob;

Attached to this narrative are the analytical results you requested on the samples submitted for the determination of polychlorinated dibenzo-*p*-dioxins and dibenzofurans. The insert below summarizes the relevant information pertaining to your project. In particular, QC annotations bring to your attention specific analytical observations and assessments made during the sample handling and data interpretation phases. A brief description of the report's components is provided. Results reported relate only to the items tested.

Project Information Summary		When applicable, see QC Annotations for details
<b>Client Project No.</b>		Givaudan
<b>AP Project No.</b>		P1788
<b>Analytical Protocol</b>		Method 1613B
<b>No. Samples Submitted</b>	14	
<b>No. Samples Analyzed</b>	3 (other samples on hold)	
<b>No. Laboratory Method Blanks</b>	1	
<b>No. OPRs / Batch CS3</b>	1	
<b>No. Outstanding Samples</b>	none	
<b>Date Received</b>	30-Oct-2009	
<b>Condition Received</b>	good	
<b>Temperature upon Receipt (C)</b>	2	
<b>Extraction within Holding Time</b>	yes	
<b>Analysis within Holding Time</b>	yes	
<b>Data meet QA/QC Requirements</b>	yes	
<b>Exceptions</b>	none	
<b>Analytical Difficulties</b>	none	

2714 EXCHANGE DRIVE  
 WILMINGTON, NC 28405  
 PH.: 910-794-1613

**ANALYTICAL PERSPECTIVES****QC Annotations:**

1. The "EMPC" data qualifier is used for analytes reported as an Estimated Maximum Possible Concentration. This flag indicates that a peak is detected but did not meet all of the method required criteria.
2. A "J" data qualifier is used for analytes with a concentration below the reporting limit.
3. The new ratio -- [Ra] -- for 2,3,7,8-TCDD following the  $^{37}\text{Cl}_4$ -2,3,7,8-TCDD correction is shown between squared brackets in the DL column.
4. An asterisk (\*) qualifier denotes a concentration determined to be above the method's calibration range but within the instrument's analytical range; such a value should therefore be considered as an estimate.
5. A "CU" is appended to a few of the sample IDs indicating results reported from a clean-up of the sample extract. The clean-up procedure was performed to remove quantitative interferences and enhances, not undermines data quality.
6. The letter has been amended. Rob Barrick is the correct contact for the analytical results.

Analytical Perspectives remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, do not hesitate to contact us. Thank you for choosing Analytical Perspectives as part of your analytical support team.

Sincerely,



Kimberly Mace, Ph.D.  
Project Manager

2714 EXCHANGE DRIVE  
WILMINGTON, NC 28405  
PH.: 910-794-1613

P1788 - TEQ  
Project ID: Givaudan

**Sample Summary**  
**Part 1 (dry weight)**



**Method 1613**

Analyte	0_7350_MB001 pg/g	0_7350_MB001 pg/g	SB12-10 pg/g	SB10-8 pg/g	SB4-6 pg/g
2,3,7,8-TCDD	(0.128)	(0.144)	2220	3670	2030
1,2,3,7,8-PeCDD	(0.0676)	(0.258)	87.7	231	69.8
1,2,3,4,7,8-HxCDD	(0.281)	(0.22)	20.3	60.5	13.3
1,2,3,6,7,8-HxCDD	(0.3)	(0.223)	42.5	112	44.9
1,2,3,7,8,9-HxCDD	(0.318)	(0.245)	26.3	71.3	15.1
1,2,3,4,6,7,8-HpCDD	(0.15)	(0.0838)	134	245	123
OCDD	(0.163)	(0.435)	2330	886	1790
2,3,7,8-TCDF	(0.112)	(0.122)	19.1	172	23.7
1,2,3,7,8-PeCDF	(0.16)	(0.34)	[3.17]	4.81	1.97
2,3,4,7,8-PeCDF	(0.168)	(0.35)	10.9	19.4	9.86
1,2,3,4,7,8-HxCDF	(0.0904)	(0.375)	7.61	8.93	6.22
1,2,3,6,7,8-HxCDF	(0.0866)	(0.347)	5.34	10.2	[5.36]
2,3,4,6,7,8-HxCDF	(0.0996)	(0.403)	51.7	239	87.2
1,2,3,7,8,9-HxCDF	(0.129)	(0.503)	[2.29]	[2.54]	[1.59]
1,2,3,4,6,7,8-HpCDF	(0.0984)	(0.121)	55.4	55.6	46
1,2,3,4,7,8,9-HpCDF	(0.133)	(0.17)	4.35	4.7	3.21
OCDF	[0.299]	(0.621)	52.3	52.6	60.9
ITEF TEQ (ND=0; EMPC=0)	0.00	0.00	2,290	3,870	2,090
ITEF TEQ (ND=0; EMPC=EMPC)	0.000299	0.00	2,290	3,870	2,100
ITEF TEQ (ND=DL/2; EMPC=0)	0.20	0.357	2,290	3,870	2,090
ITEF TEQ (ND=DL/2; EMPC=EMPC)	0.20	0.357	2,290	3,870	2,100
ITEF TEQ (ND=DL; EMPC=EMPC)	0.40	0.714	2,290	3,870	2,100
Checkcode	2465	5581	2752	3178	1914
Lab ID	MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1788_7350_005	P1788_7350_011CU	P1788_7350_014

( ) = DL  
[ ] = EMPC

Reviewer  
Date

KAM  
14 Dec 09

GIV\_NBC\_0319593

P1788 - TEQ  
Project ID: Givaudan

Sample Summary Part 1 (wet weight)		ANALYTICAL PERSPECTIVES			Method 1613	
Analyte		0_7350_MB001	0_7350_MB001	SB12-10	SB10-8	SB4-6
		pg/g	pg/g	pg/g	pg/g	pg/g
2,3,7,8-TCDD		(0.128)	(0.144)	1910	3140	1750
1,2,3,7,8-PeCDD		(0.0676)	(0.258)	75.3	198	60
1,2,3,4,7,8-HxCDD		(0.281)	(0.22)	17.4	51.8	11.4
1,2,3,6,7,8-HxCDD		(0.3)	(0.223)	36.5	96.2	38.6
1,2,3,7,8,9-HxCDD		(0.318)	(0.245)	22.5	61.1	13
1,2,3,4,6,7,8-HpCDD		(0.15)	(0.0838)	115	210	106
OCDD		(0.163)	(0.435)	2000	759	1540
2,3,7,8-TCDF		(0.112)	(0.122)	16.4	147	20.3
1,2,3,7,8-PeCDF		(0.16)	(0.34)	[2.72]	4.12	1.69
2,3,4,7,8-PeCDF		(0.168)	(0.35)	9.32	16.6	8.47
1,2,3,4,7,8-HxCDF		(0.0904)	(0.375)	6.54	7.65	5.35
1,2,3,6,7,8-HxCDF		(0.0866)	(0.347)	4.59	8.77	[4.61]
2,3,4,6,7,8-HxCDF		(0.0996)	(0.403)	44.4	204	74.9
1,2,3,7,8,9-HxCDF		(0.129)	(0.503)	[1.96]	[2.17]	[1.36]
1,2,3,4,6,7,8-HpCDF		(0.0984)	(0.121)	47.6	47.6	39.5
1,2,3,4,7,8,9-HpCDF		(0.133)	(0.17)	3.73	4.03	2.76
OCDF		[0.299]	(0.621)	44.9	45	52.3
ITEF TEQ (ND=0; EMPC=0)		0	0	1970	3310	1800
ITEF TEQ (ND=0; EMPC=EMPC)		0.000299	0	1970	3310	1800
ITEF TEQ (ND=DL/2; EMPC=0)		0.2	0.357	1970	3310	1800
ITEF TEQ (ND=DL/2; EMPC=EMPC)		0.2	0.357	1970	3310	1800
ITEF TEQ (ND=DL; EMPC=EMPC)		0.4	0.714	1970	3310	1800
Checkcode		2465	5581	2752	3178	1914
Lab ID		MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1788_7350_005	P1788_7350_011CU	P1788_7350_014

( ) = DL  
[ ] = EMPC

Reviewer  
Date

KAM  
14 Dec 09

GIV\_NBC\_0319594

**P1788 - WHO 2005 TEF-TEQ**  
**Project ID: Givaudan**

**Sample Summary**  
**Part 1 (dry weight)**



**Method 1613**

Analyte	0_7350_MB001 pg/g	0_7350_MB001 pg/g	SB12-10 pg/g	SB10-8 pg/g	SB4-6 pg/g
2,3,7,8-TCDD	(0.128)	(0.144)	2220	3670	2030
1,2,3,7,8-PeCDD	(0.0676)	(0.258)	87.7	231	69.8
1,2,3,4,7,8-HxCDD	(0.281)	(0.22)	20.3	60.5	13.3
1,2,3,6,7,8-HxCDD	(0.3)	(0.223)	42.5	112	44.9
1,2,3,7,8,9-HxCDD	(0.318)	(0.245)	26.3	71.3	15.1
1,2,3,4,6,7,8-HpCDD	(0.15)	(0.0838)	134	245	123
OCDD	(0.163)	(0.435)	2330	886	1790
2,3,7,8-TCDF	(0.112)	(0.122)	19.1	172	23.7
1,2,3,7,8-PeCDF	(0.16)	(0.34)	[3.17]	4.81	1.97
2,3,4,7,8-PeCDF	(0.168)	(0.35)	10.9	19.4	9.86
1,2,3,4,7,8-HxCDF	(0.0904)	(0.375)	7.61	8.93	6.22
1,2,3,6,7,8-HxCDF	(0.0866)	(0.347)	5.34	10.2	[5.36]
2,3,4,6,7,8-HxCDF	(0.0996)	(0.403)	51.7	239	87.2
1,2,3,7,8,9-HxCDF	(0.129)	(0.503)	[2.29]	[2.54]	[1.59]
1,2,3,4,6,7,8-HpCDF	(0.0984)	(0.121)	55.4	55.6	46
1,2,3,4,7,8,9-HpCDF	(0.133)	(0.17)	4.35	4.7	3.21
OCDF	[0.299]	(0.621)	52.3	52.6	60.9
WHO 2005 TEF TEQ (ND=0; EMPC=0)	0	0	2330	3980	2130
WHO 2005 TEF TEQ (ND=0; EMPC=EMPC)	0.0000896	0	2330	3980	2130
WHO 2005 TEF TEQ (ND=DL/2; EMPC=0)	0.198	0.383	2330	3980	2130
WHO 2005 TEF TEQ (ND=DL/2; EMPC=EMPC)	0.198	0.383	2330	3980	2130
WHO 2005 TEF TEQ (ND=DL; EMPC=EMPC)	0.396	0.765	2330	3980	2130
Checkcode	2465	5581	2752	3178	1914
Lab ID	MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1788_7350_005	P1788_7350_011CU	P1788_7350_014

( ) = DL  
[] = EMPC

Reviewer: KAM  
Date: 14 Dec 09

GIV\_NBC\_0319595

**P1788 - Totals**  
**Project ID: Givaudan**

<b>Sample Summary</b> <b>Part 2 (dry weight)</b>		 ANALYTICAL PERSPECTIVES			<b>Method 1613</b>
Analyte	0_7350_MB001 pg/g	0_7350_MB001 pg/g	SB12-10 pg/g	SB10-8 pg/g	SB4-6 pg/g
<b>Totals</b>					
TCDDs	0	0	2370	4010	2160
PeCDDs	0	0	324	786	344
HxCDDs	0	0	357	1010	356
HpCDDs	0	0	284	520	260
OCDD	0	0	2330	886	1790
TCDFs	0	0	576	3110	810
PeCDFs	0	0	723	2860	1680
HxCDFs	0	0	4120	17900	8710
HpCDFs	0	0	107	162	117
OCDF	0	0	52.3	52.6	60.9
<b>Total PCDD/Fs (ND=0; EMPC=0)</b>	<b>0.00</b>	<b>0.00</b>	<b>11,300</b>	<b>31,300</b>	<b>16,300</b>
<b>Total PCDD/Fs (ND=0; EMPC=EMPC)</b>	<b>0.299</b>	<b>0.00</b>	<b>11,300</b>	<b>31,400</b>	<b>16,400</b>
<b>Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)</b>	<b>2.78</b>	<b>4.96</b>	<b>11,300</b>	<b>31,400</b>	<b>16,400</b>
<b>Total 2378s (ND=0; EMPC=0)</b>	<b>0.00</b>	<b>0.00</b>	<b>5,070</b>	<b>5,840</b>	<b>4,330</b>
<b>Total 2378s (ND=0.5; EMPC=0)</b>	<b>1.28</b>	<b>2.48</b>	<b>5,070</b>	<b>5,840</b>	<b>4,330</b>
<b>Total 2378s (ND=1; EMPC=0)</b>	<b>2.57</b>	<b>4.96</b>	<b>5,070</b>	<b>5,850</b>	<b>4,330</b>
<b>Total 2378s (ND=0; EMPC=1)</b>	<b>0.299</b>	<b>0.00</b>	<b>5,080</b>	<b>5,850</b>	<b>4,330</b>
<b>Total 2378s (ND=0.5; EMPC=1)</b>	<b>1.54</b>	<b>2.48</b>	<b>5,080</b>	<b>5,850</b>	<b>4,330</b>
<b>Total 2378s (ND=1; EMPC=1)</b>	<b>2.78</b>	<b>4.96</b>	<b>5,080</b>	<b>5,850</b>	<b>4,330</b>
Checkcode	2465	5581	2752	3178	1914
Lab ID	MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1788_7350_005	P1788_7350_011CU	P1788_7350_014

( ) = DL  
[ ] = EMPC

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**P1788 - Totals**  
**Project ID: Givaudan**

**Sample Summary**  
**Part 2 (wet weight)**



**Method 1613**

Analyte	0_7350_MB001 pg/g	0_7350_MB001 pg/g	SB12-10 pg/g	SB10-8 pg/g	SB4-6 pg/g
<b>Totals</b>					
TCDDs	0	0	2040	3440	1850
PeCDDs	0	0	278	673	296
HxCDDs	0	0	306	861	306
HpCDDs	0	0	244	446	223
OCDD	0	0	2000	759	1540
TCDFs	0	0	494	2660	696
PeCDFs	0	0	620	2450	1440
HxCDFs	0	0	3540	15400	7490
HpCDFs	0	0	92	139	100
OCDF	0	0	44.9	45	52.3
Total PCDD/Fs (ND=0; EMPC=0)	0	0	9660	26800	14000
Total PCDD/Fs (ND=0; EMPC=EMPC)	0.299	0	9690	26900	14100
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)	2.78	4.96	9690	26900	14100
Total 2378s (ND=0; EMPC=0)	0	0	4350	5000	3720
Total 2378s (ND=0.5; EMPC=0)	1.28	2.48	4350	5000	3720
Total 2378s (ND=1; EMPC=0)	2.57	4.96	4350	5010	3720
Total 2378s (ND=0; EMPC=1)	0.299	0	4360	5010	3720
Total 2378s (ND=0.5; EMPC=1)	1.54	2.48	4360	5010	3720
Total 2378s (ND=1; EMPC=1)	2.78	4.96	4360	5010	3720
Checkcode	2465	5581	2752	3178	1914
Lab ID	MB1_7350_DF_SDS	MB1_7350_DF_SDSCU	P1788_7350_005	P1788_7350_011CU	P1788_7350_014

( ) = DL  
 [ ] = EMPC

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 14 Dec 09

GIV\_NBC\_0319597

**P1788 - Others**  
**Project ID: Givaudan**

**Sample Summary**  
**Part 3 (dry weight)**



**Method 1613**

Analyte	0_7350_MB001 pg/g	0_7350_MB001 pg/g	SB12-10 pg/g	SB10-8 pg/g	SB4-6 pg/g
<b>Other PCDD/Fs (ND=0, EMPC=0)</b>					
Other TCDD	0	0	152	344	124
Other PeCDD	0	0	236	556	274
Other HxCDD	0	0	267	761	283
Other HpCDD	0	0	150	275	137
Other TCDF	0	0	557	2940	787
Other PeCDF	0	0	712	2840	1670
Other HxCDF	0	0	4060	17700	8620
Other HpCDF	0	0	47.4	102	67.6
<b>Other PCDD/Fs (ND=0, EMPC=EMPC)</b>					
Other TCDD	0	0	152	347	125
Other PeCDD	0	0	236	556	274
Other HxCDD	0	0	284	791	302
Other HpCDD	0	0	150	275	137
Other TCDF	0	0	558	2950	835
Other PeCDF	0	0	723	2850	1680
Other HxCDF	0	0	4060	17700	8630
Other HpCDF	0	0	47.4	102	67.6
Checkcode Lab ID	2465 MB1_7350_DF_SDS	5581 MB1_7350_DF_SDSCU	2752 P1788_7350_005	3178 P1788_7350_011CU	1914 P1788_7350_014

( ) = DL  
[ ] = EMPC

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Date

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14 Dec 09

GIV\_NBC\_0319598

**P1788 - DLs**  
**Project ID: Givaudan**

**Sample Summary**  
**Part 5 (dry weight)**



**Method 1613**

Analyte	0_7350_MB001	0_7350_MB001	SB12-10	SB10-8	SB4-6
	pg/g	pg/g	pg/g	pg/g	pg/g
2,3,7,8-TCDD	0.128	0.144	0.0888	0.22	0.167
1,2,3,7,8-PeCDD	0.0676	0.258	0.463	0.421	0.946
1,2,3,4,7,8-HxCDD	0.281	0.22	0.259	0.28	1.25
1,2,3,6,7,8-HxCDD	0.3	0.223	0.283	0.314	1.25
1,2,3,7,8,9-HxCDD	0.318	0.245	0.312	0.342	1.39
1,2,3,4,6,7,8-HpCDD	0.15	0.0838	1.56	1.66	1.47
OCDD	0.163	0.435	0.334	0.139	0.294
2,3,7,8-TCDF	0.112	0.122	0.128	0.243	0.265
1,2,3,7,8-PeCDF	0.16	0.34	0.31	0.795	0.555
2,3,4,7,8-PeCDF	0.168	0.35	0.329	0.828	0.564
1,2,3,4,7,8-HxCDF	0.0904	0.375	0.508	2.05	0.792
1,2,3,6,7,8-HxCDF	0.0866	0.347	0.507	2.08	0.773
2,3,4,6,7,8-HxCDF	0.0996	0.403	0.534	2.26	0.881
1,2,3,7,8,9-HxCDF	0.129	0.503	0.658	2.21	1.09
1,2,3,4,6,7,8-HpCDF	0.0984	0.121	0.183	0.195	0.182
1,2,3,4,7,8,9-HpCDF	0.133	0.17	0.259	0.275	0.246
OCDF	0.0809	0.621	0.0931	0.792	0.258
Total TCDD	0.128	0.144	0.0888	0.22	0.167
Total PeCDD	0.0676	0.258	0.463	0.421	0.946
Total HxCDD	0.3	0.229	0.285	0.313	1.3
Total HpCDD	0.15	0.0838	1.56	1.66	1.47
Total TCDF	0.112	0.122	0.128	0.243	0.265
Total PeCDF	0.164	0.345	0.319	0.811	0.56
Total HxCDF	0.0994	0.402	0.55	2.15	0.879
Total HpCDF	0.115	0.143	0.216	0.231	0.211
Checkcode	2465	5581	2752	3178	1914
Lab ID	MB1_7350_DF_SDSDS	MB1_7350_DF_SDSCU	P1788_7350_005	P1788_7350_011CU	P1788_7350_014

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Date

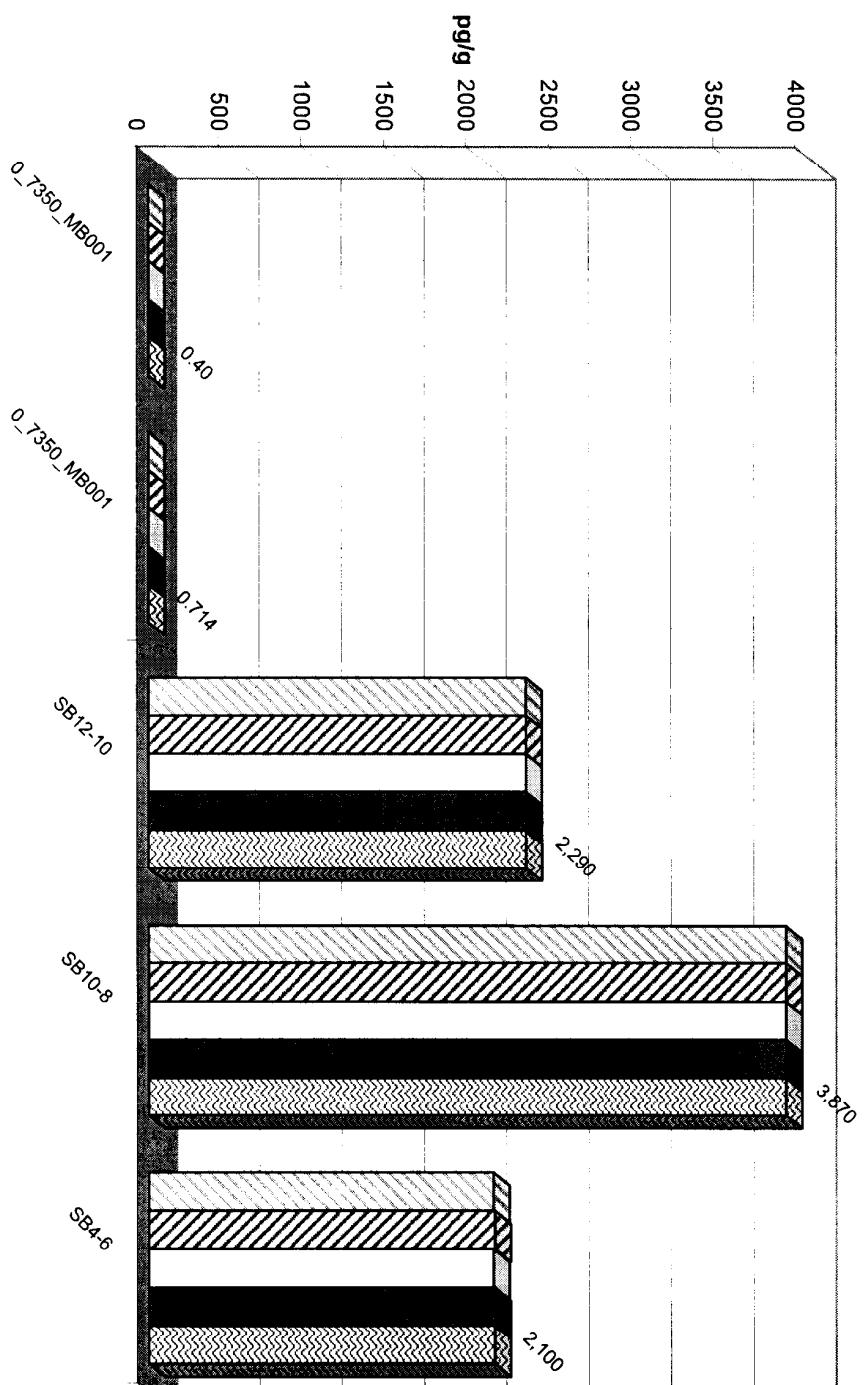
KAM  
14 Dec 09

GIV\_NBC\_0319599

# ITEF-TEQ

Project ID: Givaudan  
P1788

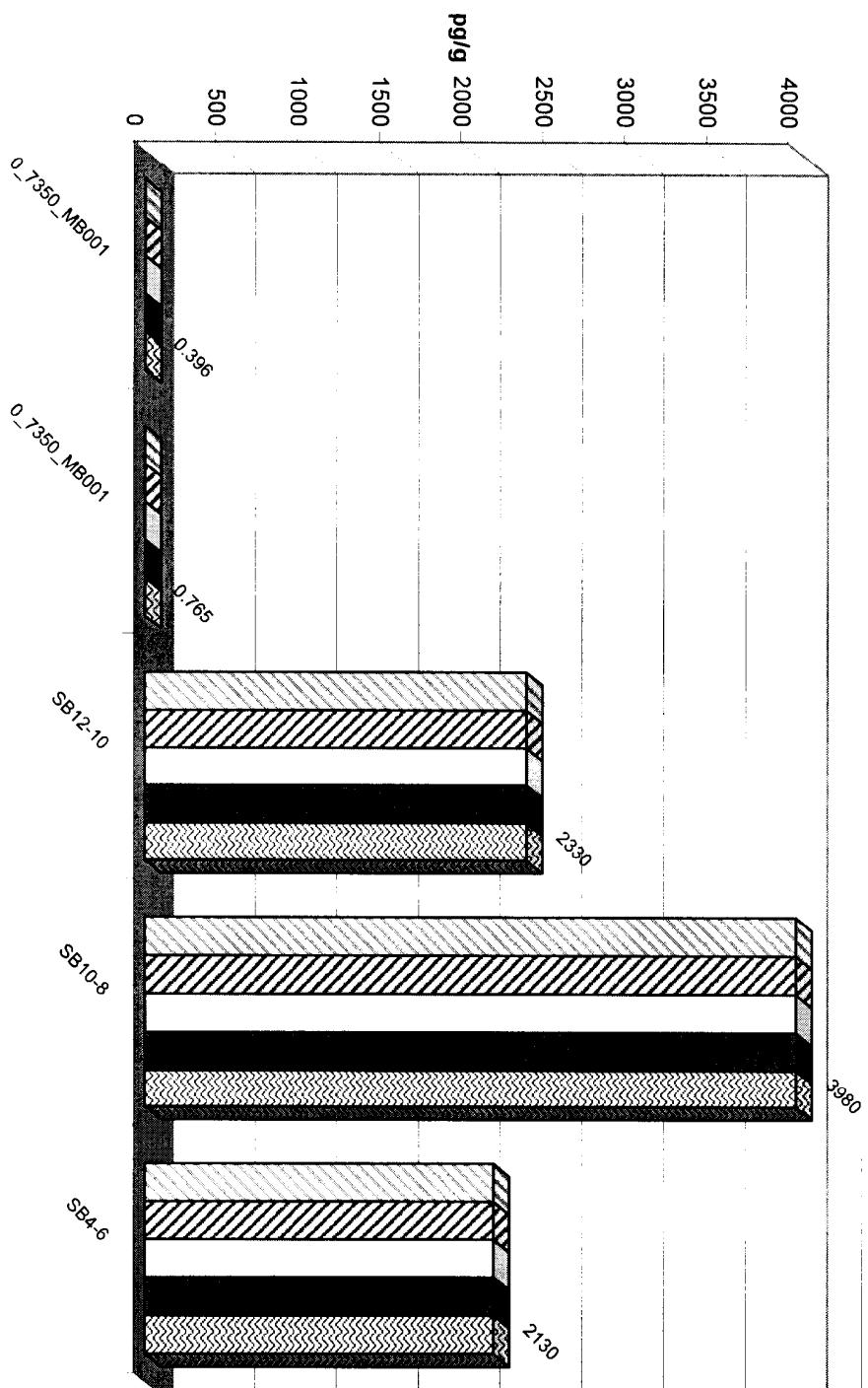
- ND=0; EMPC=0
- ND=0; EMPC=EMPC
- ND=DL2; EMPC=0
- ND=DL2; EMPC=EMPC
- ▨ ND=DL; EMPC=EMPC



# WHO 2005 TEF-TEQ

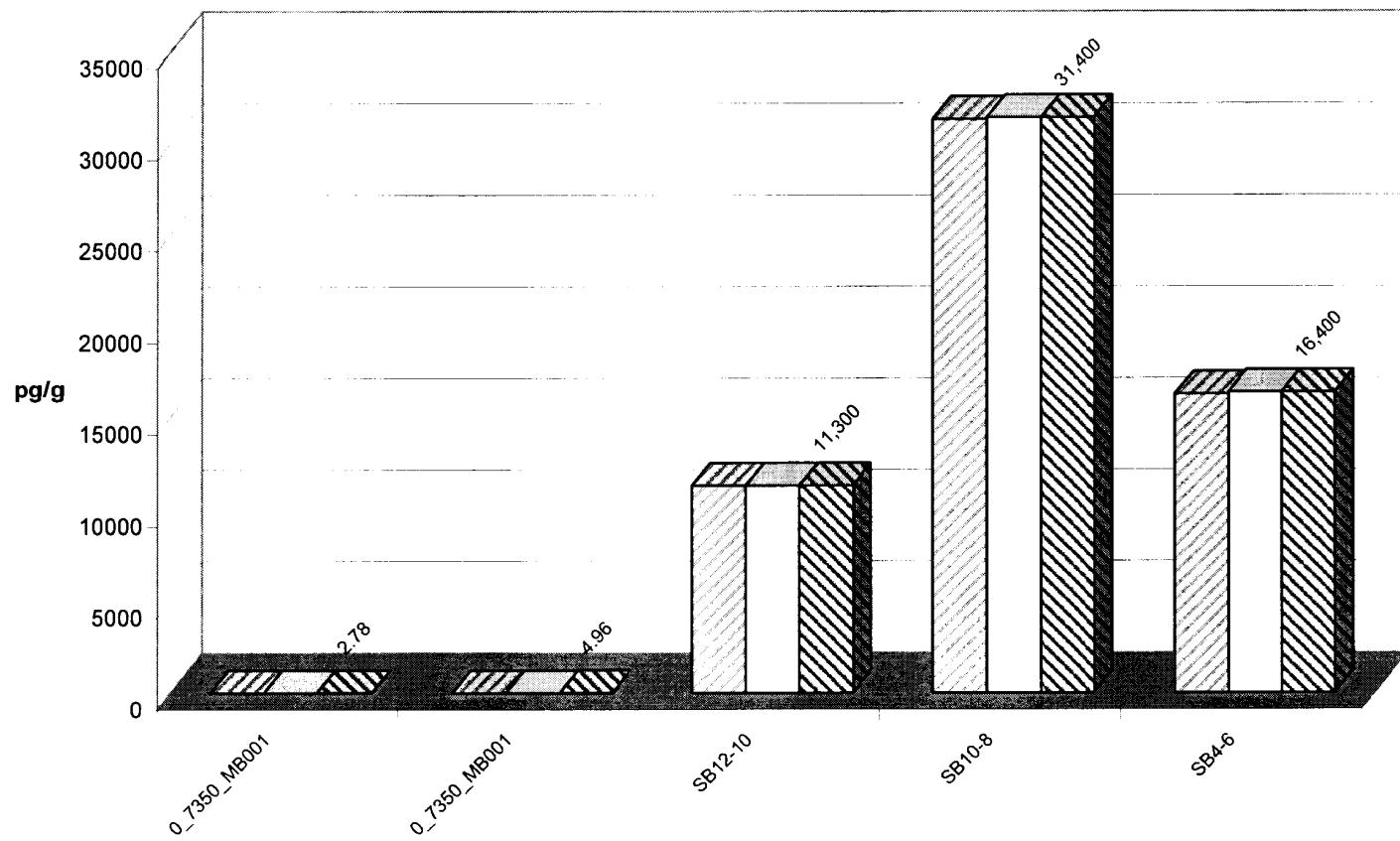
Project ID: Givaudan  
P1788

- ND=0; EMPC=0
- ND=0; EMPC=EMPC
- ND=DL/2; EMPC=0
- ND=DL/2; EMPC=EMPC
- ND=DL; EMPC=EMPC



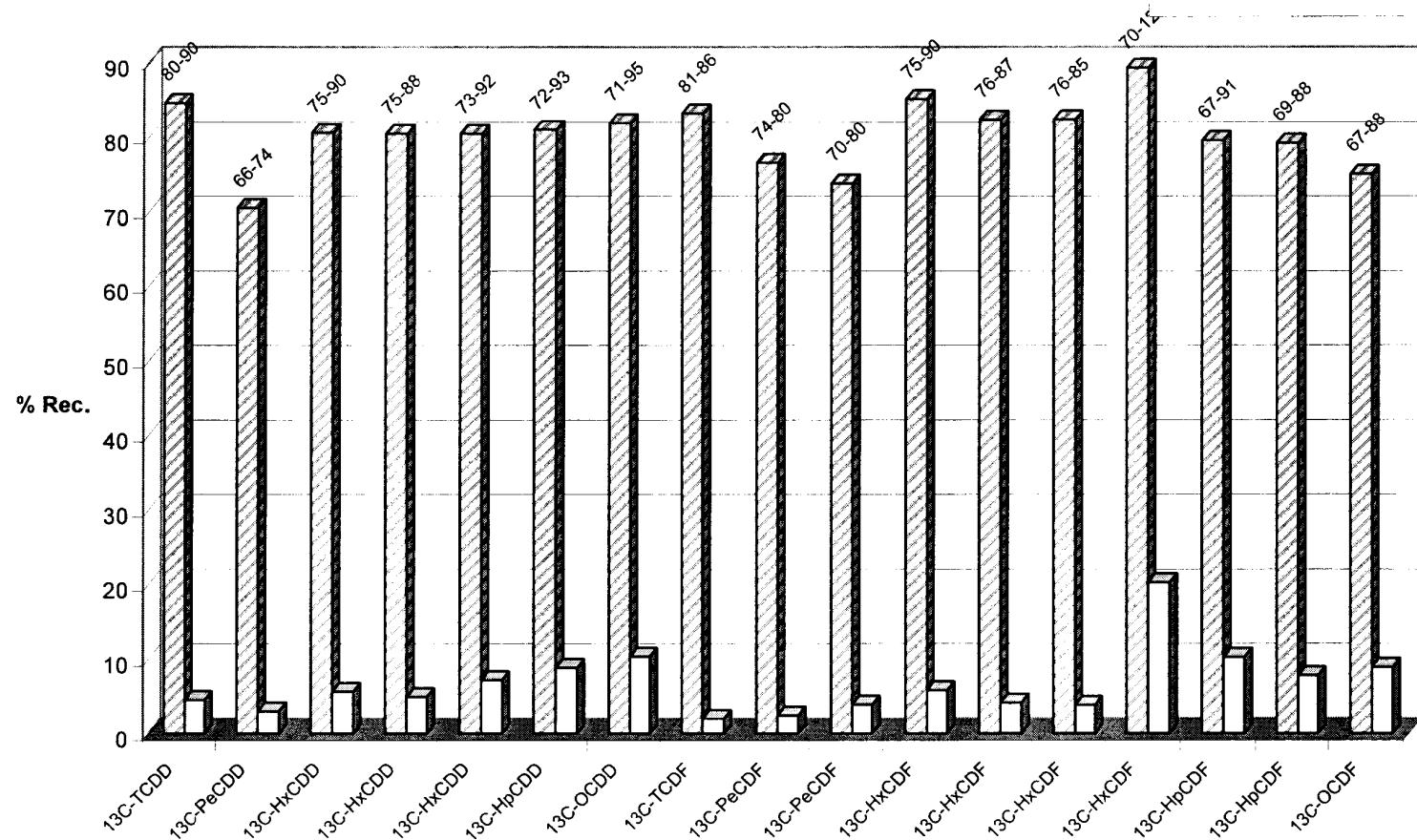
**Totals**  
Project ID: Givaudan  
P1788

- Total PCDD/Fs (ND=0; EMPC=0)
- Total PCDD/Fs (ND=0; EMPC=EMPC)
- Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)



**Mean Recoveries of Extraction Standards (N=5)**  
Project ID: Givaudan  
P1788

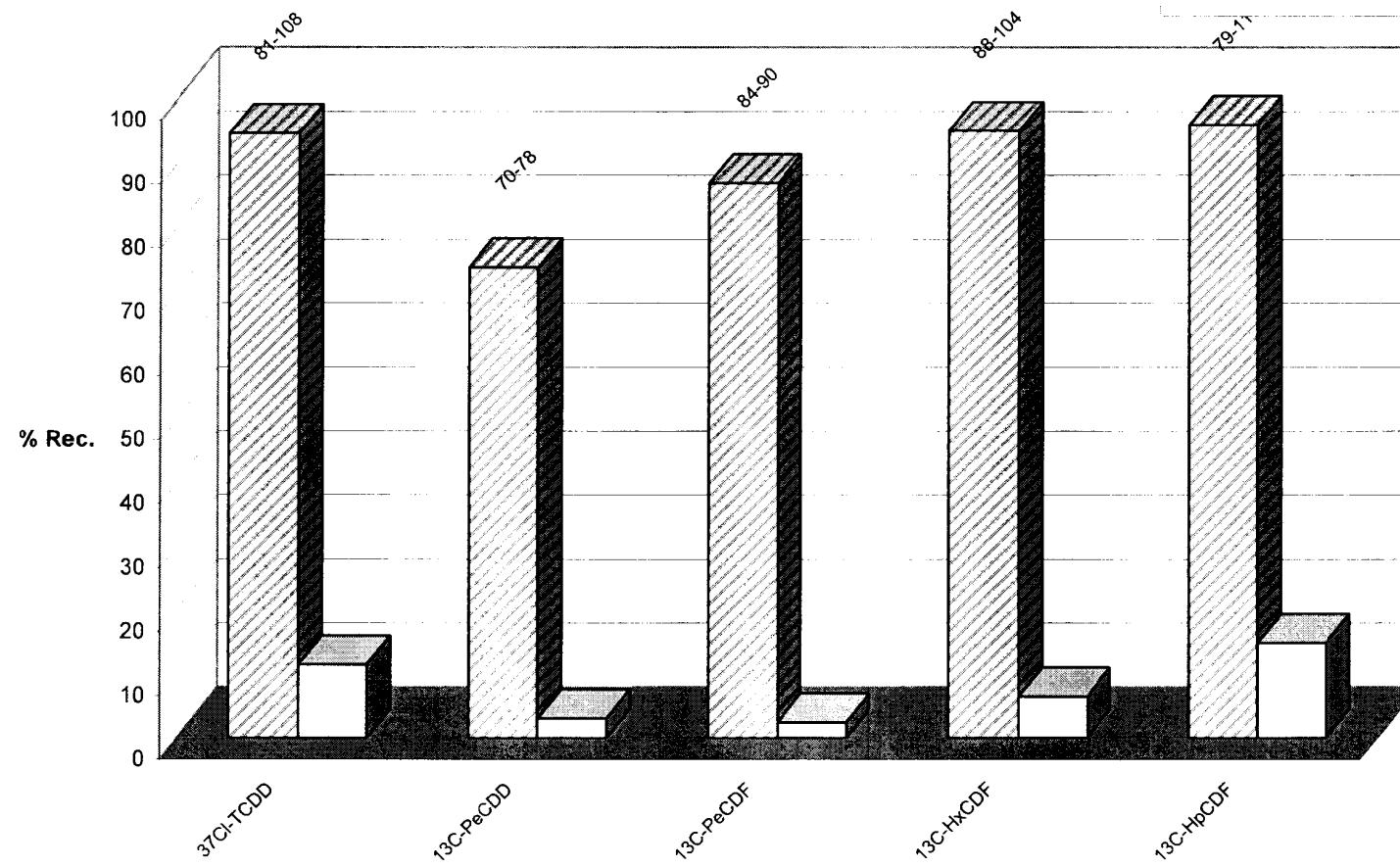
Mean Std. Dev.



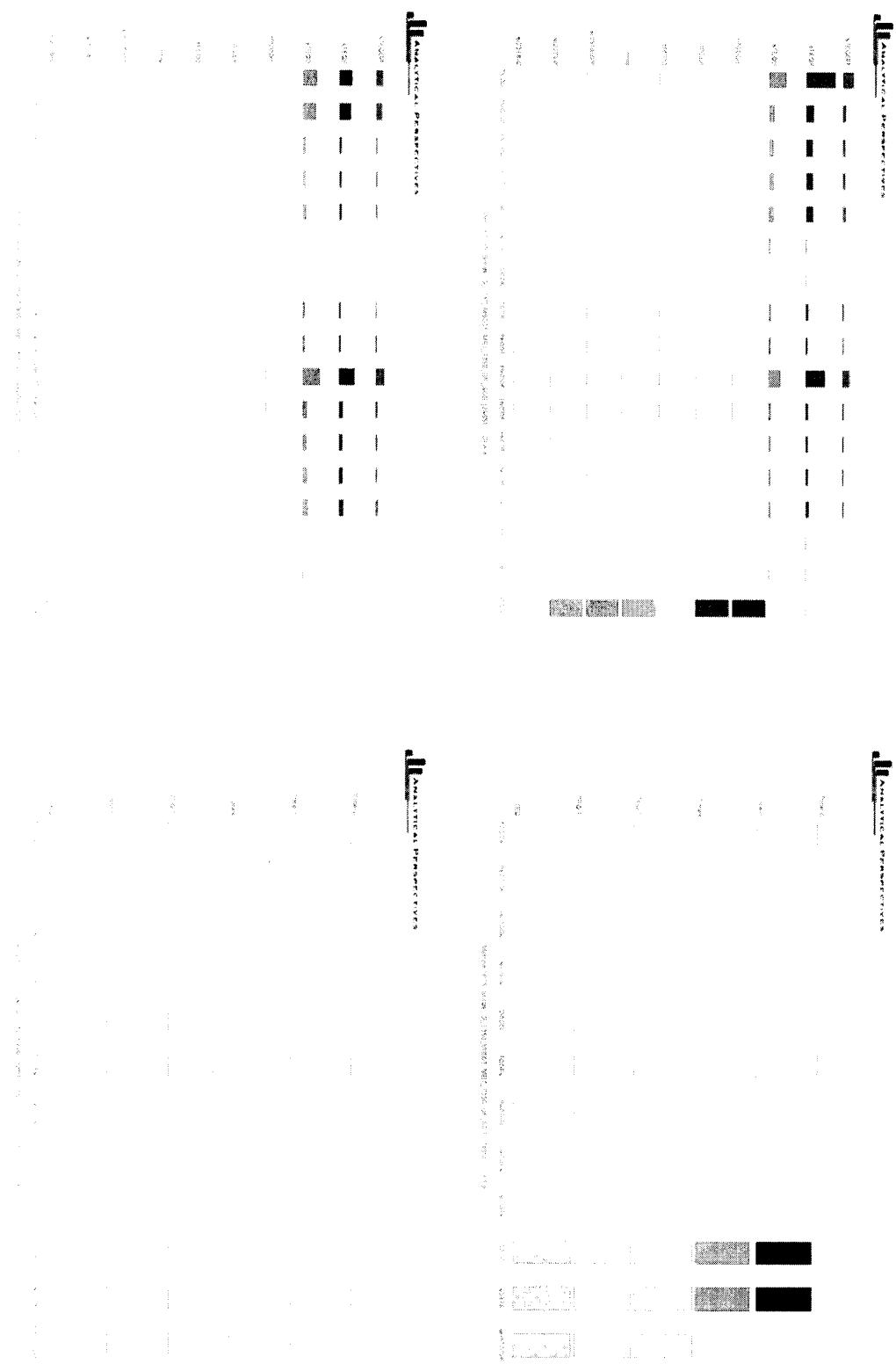
GIV\_NBC\_0319603

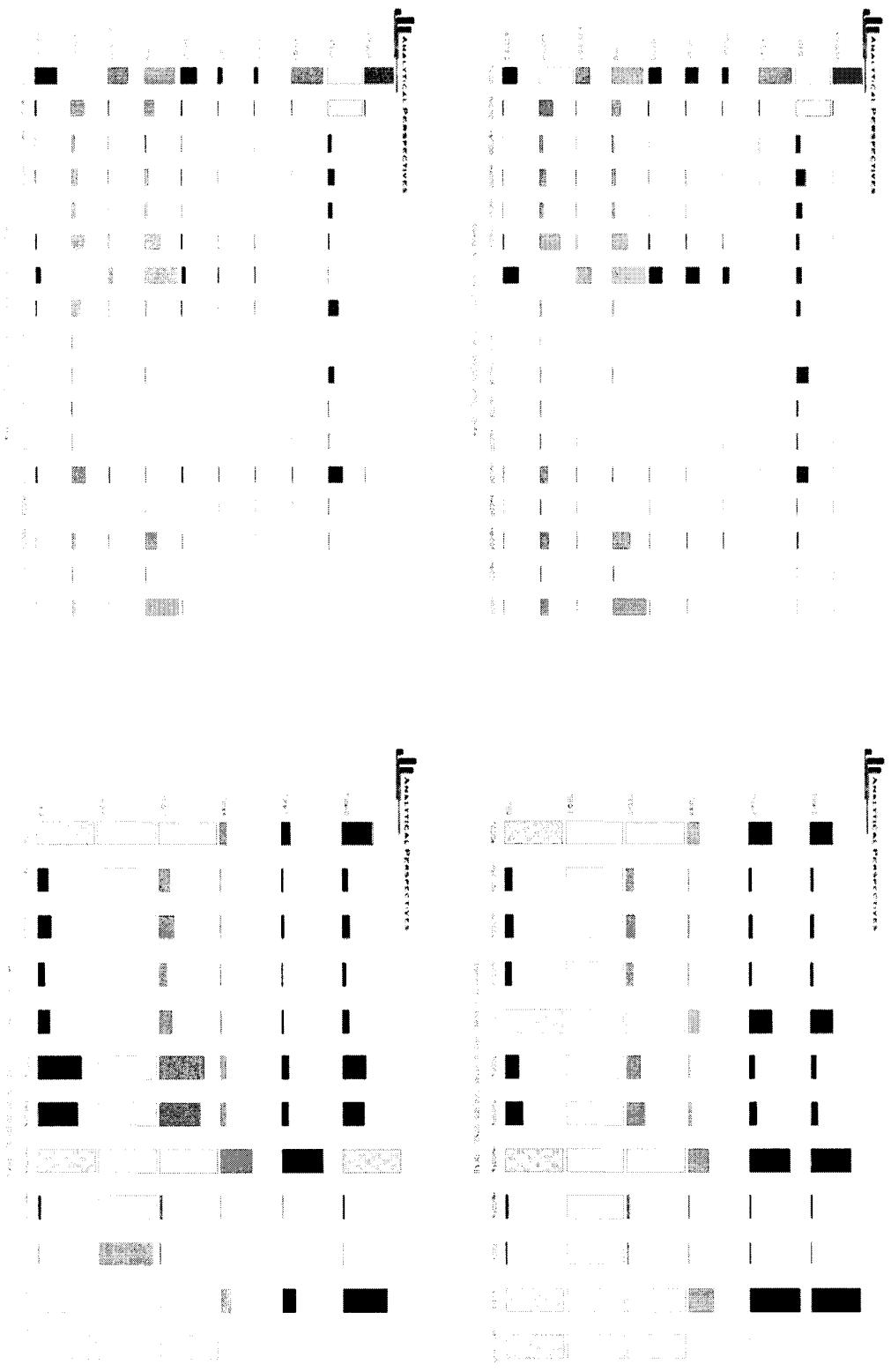
**Mean Recoveries of Clean-Up Standards (N=5)**  
**Project ID: Givaudan**  
**P1788**

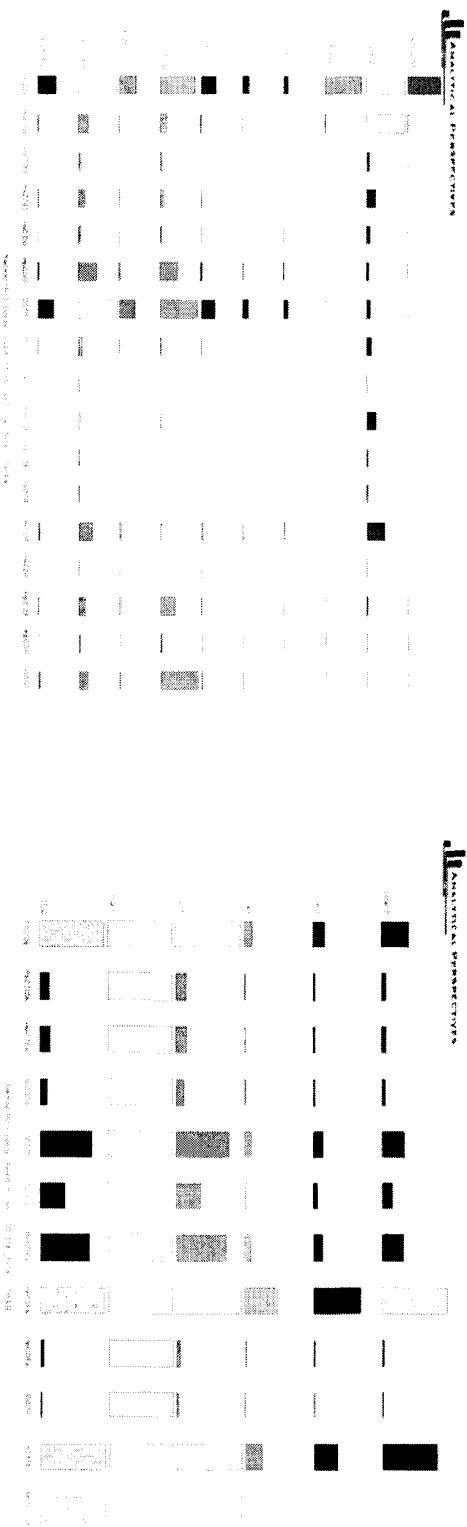
Mean Std. Dev.



GIV\_NBC\_0319604







**Sample ID: 0\_7350\_MB001**
**Method 1613**

<u>Client Data</u>		<u>Sample Data</u>		<u>Laboratory Data</u>			
Name:	Entrix	Matrix:	Solids	Project No.:	P1788	Date Received:	n/a
Project ID:	Givaudan	Weight/Volume:	11.00 g	Sample ID:	MB1_7350_DF SDS	Date Extracted:	23 Nov 2009
Date Collected:	n/a	% Solids:	n/a	QC Batch No.:	7350	Date Analyzed:	04 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	17:18:08
<b>Analyte</b>	<b>Conc. (pg/g)</b>	<b>DL (pg/g)</b>	<b>EMPC (pg/g)</b>	<b>Qualifiers</b>	<b>Standard</b>	<b>ES Recoveries</b>	<b>Qualifiers</b>
2,3,7,8-TCDD	ND	0.128			13C-2,3,7,8-TCDD	79.9	
1,2,3,7,8-PeCDD	ND	0.0676			13C-1,2,3,7,8-PeCDD	66.4	
1,2,3,4,7,8-HxCDD	ND	0.281			13C-1,2,3,4,7,8-HxCDD	78	
1,2,3,6,7,8-HxCDD	ND	0.3			13C-1,2,3,6,7,8-HxCDD	79.5	
1,2,3,7,8,9-HxCDD	ND	0.318			13C-1,2,3,7,8,9-HxCDD	76.6	
1,2,3,4,6,7,8-HpCDD	ND	0.15			13C-1,2,3,4,6,7,8-HpCDD	72.7	
OCDD	ND	0.163			13C-OCDD	72.1	
2,3,7,8-TCDF	ND	0.112			13C-2,3,7,8-TCDF	81.6	
1,2,3,7,8-PeCDF	ND	0.16			13C-1,2,3,7,8-PeCDF	73.6	
2,3,4,7,8-PeCDF	ND	0.168			13C-2,3,4,7,8-PeCDF	70.4	
1,2,3,4,7,8-HxCDF	ND	0.0904			13C-1,2,3,4,7,8-HxCDF	86.5	
1,2,3,6,7,8-HxCDF	ND	0.0866			13C-1,2,3,6,7,8-HxCDF	86.6	
2,3,4,6,7,8-HxCDF	ND	0.0996			13C-2,3,4,6,7,8-HxCDF	83	
1,2,3,7,8,9-HxCDF	ND	0.129			13C-1,2,3,7,8,9-HxCDF	74.9	
1,2,3,4,6,7,8-HpCDF	ND	0.0984			13C-1,2,3,4,6,7,8-HpCDF	70.6	
1,2,3,4,7,8,9-HpCDF	ND	0.133			13C-1,2,3,4,7,8,9-HpCDF	74.2	
OCDF	EMPC		0.299	J	13C-OCDF	73.2	
<b>Totals</b>					<b>CS Recoveries</b>		
TCDDs	ND	0.128			37Cl-2,3,7,8-TCDD	81.2	
PeCDDs	ND	0.0676			13C-1,2,3,4,7-PeCDD	70.1	
HxCDDs	ND	0.3			13C-1,2,3,4,6-PeCDF	84	
HpCDDs	ND	0.15			13C-1,2,3,4,6,9-HxCDF	98.2	
TCDFs	ND	0.112			13C-1,2,3,4,6,8,9-HpCDF	84.9	
PeCDFs	ND	0.164					
HxCDFs	ND	0.0994			13C-1,3,6,8-TCDD	104	
HpCDFs	ND	0.115			13C-1,3,6,8-TCDF	106	
<b>Total PCDD/Fs</b>	<b>0</b>		<b>0.299</b>		2714 Exchange Drive		
<b>ITEF TEQs</b>					Wilmington, NC 28405		
TEQ: ND=0	0		0.000299		USA		
TEQ: ND=DL/2	0.2		0.2		info@ultratrace.com		
TEQ: ND=DL	0.4		0.4		www.ultratrace.com		

Checkcode: 2465



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KAM  
14 Dec 09

GIV\_NBC\_0319608

**Sample ID: 0\_7350\_MB001**
**Method 1613**

<b>Client Data</b>		<b>Sample Data</b>		<b>Laboratory Data</b>			
Name:	Entrix	Matrix:	Solids	Project No.:	P1788	Date Received:	n/a
Project ID:	Givaudan	Weight/Volume:	10.00 g	Sample ID:	MB1_7350_DF_SDSCU	Date Extracted:	23 Nov 2009
Date Collected:	n/a	% Solids:	n/a	QC Batch No.:	7350	Date Analyzed:	10 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	12:54:16
<b>Analyte</b>	<b>Conc. (pg/g)</b>	<b>DL (pg/g)</b>	<b>EMPC (pg/g)</b>	<b>Qualifiers</b>	<b>Standard</b>	<b>ES Recoveries</b>	<b>Qualifiers</b>
2,3,7,8-TCDD	ND	0.144			13C-2,3,7,8-TCDD	80.2	
1,2,3,7,8-PeCDD	ND	0.258			13C-1,2,3,7,8-PeCDD	68.6	
1,2,3,4,7,8-HxCDD	ND	0.22			13C-1,2,3,4,7,8-HxCDD	74.9	
1,2,3,6,7,8-HxCDD	ND	0.223			13C-1,2,3,6,7,8-HxCDD	74.8	
1,2,3,7,8,9-HxCDD	ND	0.245			13C-1,2,3,7,8,9-HxCDD	72.7	
1,2,3,4,6,7,8-HpCDD	ND	0.0838			13C-1,2,3,4,6,7,8-HpCDD	71.7	
OCDD	ND	0.435			13C-OCDD	70.7	
2,3,7,8-TCDF	ND	0.122			13C-2,3,7,8-TCDF	80.9	
1,2,3,7,8-PeCDF	ND	0.34			13C-1,2,3,7,8-PeCDF	75.5	
2,3,4,7,8-PeCDF	ND	0.35			13C-2,3,4,7,8-PeCDF	71	
1,2,3,4,7,8-HxCDF	ND	0.375			13C-1,2,3,4,7,8-HxCDF	75.2	
1,2,3,6,7,8-HxCDF	ND	0.347			13C-1,2,3,6,7,8-HxCDF	75.9	
2,3,4,6,7,8-HxCDF	ND	0.403			13C-2,3,4,6,7,8-HxCDF	75.7	
1,2,3,7,8,9-HxCDF	ND	0.503			13C-1,2,3,7,8,9-HxCDF	70.3	
1,2,3,4,6,7,8-HpCDF	ND	0.121			13C-1,2,3,4,6,7,8-HpCDF	67.1	
1,2,3,4,7,8,9-HpCDF	ND	0.17			13C-1,2,3,4,7,8,9-HpCDF	68.7	
OCDF	ND	0.621			13C-OCDF	66.7	
<b>Totals</b>					<b>CS Recoveries</b>		
TCDDs	ND	0.144			37Cl-2,3,7,8-TCDD	84.1	
PeCDDs	ND	0.258			13C-1,2,3,4,7-PeCDD	72.2	
HxCDDs	ND	0.229			13C-1,2,3,4,6-PeCDF	85.7	
HpCDDs	ND	0.0838			13C-1,2,3,4,6,9-HxCDF	87.9	
TCDFs	ND	0.122			13C-1,2,3,4,6,8,9-HpCDF	79	
PeCDFs	ND	0.345					<b>AS Recoveries</b>
HxCDFs	ND	0.402			13C-1,3,6,8-TCDD	102	
HpCDFs	ND	0.143			13C-1,3,6,8-TCDF	110	
<b>Total PCDD/Fs</b>	<b>0</b>		<b>0</b>				
<b>ITEF TEQs</b>					<b>ANALYTICAL PERSPECTIVES</b>	2714 Exchange Drive	
TEQ: ND=0	0		0			Wilmington, NC 28405	
TEQ: ND=DL/2	0.357		0.357			USA	
TEQ: ND=DL	0.714		0.714		Tel: +1 910 794-1613; Toll-Free 866 846-8290	info@ultratrace.com	
					Fax: +1 910 794-3919	www.ultratrace.com	

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14 Dec 09

GIV\_NBC\_0319609

**Sample ID: 0\_7350\_OPR001****Method 1613**

<u>Client Data</u>		<u>Sample Data</u>		<u>Laboratory Data</u>			
Name:	Entrix	Matrix:	Solids	Project No.:	P1788	Date Received:	n/a
Project ID:	Givaudan	Weight/Volume:	1.00 g	Sample ID:	OPR1_7350_DF	Date Extracted:	23 Nov 2009
Date Collected:	n/a	% Solids:	n/a	QC Batch No.:	7350	Date Analyzed:	04 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	14:46:50
<u>Analyte</u>	<u>Conc. (pg/g)</u>	<u>DL (pg/g)</u>	<u>EMPC (pg/g)</u>	<u>Qualifiers</u>	<u>Standard</u>	<u>ES Recoveries</u>	<u>Qualifiers</u>
2,3,7,8-TCDD	10.1	[Ra=0.788]			13C-2,3,7,8-TCDD	77	
1,2,3,7,8-PeCDD	53.6				13C-1,2,3,7,8-PeCDD	66.2	
1,2,3,4,7,8-HxCDD	50.2				13C-1,2,3,4,7,8-HxCDD	76.7	
1,2,3,6,7,8-HxCDD	51.2				13C-1,2,3,6,7,8-HxCDD	79.8	
1,2,3,7,8,9-HxCDD	47.7				13C-1,2,3,7,8,9-HxCDD	79.9	
1,2,3,4,6,7,8-HpCDD	51.9				13C-1,2,3,4,6,7,8-HpCDD	68.7	
OCDD	107				13C-OCDD	72.5	
2,3,7,8-TCDF	10.8				13C-2,3,7,8-TCDF	79.4	
1,2,3,7,8-PeCDF	49.4				13C-1,2,3,7,8-PeCDF	72.9	
2,3,4,7,8-PeCDF	52.5				13C-2,3,4,7,8-PeCDF	69.7	
1,2,3,4,7,8-HxCDF	50.2				13C-1,2,3,4,7,8-HxCDF	84.3	
1,2,3,6,7,8-HxCDF	51.3				13C-1,2,3,6,7,8-HxCDF	84.1	
2,3,4,6,7,8-HxCDF	51.8				13C-2,3,4,6,7,8-HxCDF	81.1	
1,2,3,7,8,9-HxCDF	50				13C-1,2,3,7,8,9-HxCDF	76.8	
1,2,3,4,6,7,8-HpCDF	52.5				13C-1,2,3,4,6,7,8-HpCDF	71.4	
1,2,3,4,7,8,9-HpCDF	50.3				13C-1,2,3,4,7,8,9-HpCDF	72.5	
OCDF	104				13C-OCDF	72.7	
<b>Totals</b>					<b>CS Recoveries</b>		
TCDDs	43.9		44.1		37CI-2,3,7,8-TCDD	77.4	
PeCDDs	78.4		78.8		13C-1,2,3,4,7-PeCDD	68.2	
HxCDDs	161		161		13C-1,2,3,4,6-PeCDF	83.9	
HpCDDs	64.1		64.5		13C-1,2,3,4,6,9-HxCDF	95.5	
TCDFs	46.3		46.7		13C-1,2,3,4,6,8,9-HpCDF	80.6	
PeCDFs	114		122				
HxCDFs	314				<b>AS Recoveries</b>		
HpCDFs	103		104		13C-1,3,6,8-TCDD	97.5	
<b>Total PCDD/Fs</b>	<b>1,140</b>		<b>1,150</b>		13C-1,3,6,8-TCDF	103	
<b>ITEF TEQs</b>					<b>ANALYTICAL PERSPECTIVES</b>	2714 Exchange Drive	
TEQ: ND=0	104		104			Wilmington, NC 28405	
TEQ: ND=DL/2	104		104			USA	
TEQ: ND=DL	104		104		Tel: +1 910 794-1613; Toll-Free 866 846-8290	info@ultratrace.com	
					Fax: +1 910 794-3919	www.ultratrace.com	

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GIV\_NBC\_0319610

**Sample ID: SB12-10**
**Method 1613**

<u>Client Data</u>		<u>Sample Data</u>		<u>Laboratory Data</u>			
Name:	Entrix	Matrix:	Solids	Project No.:	P1788	Date Received:	30 Oct 2009
Project ID:	Givaudan	Weight/Volume:	11.65 g	Sample ID:	P1788_7350_005	Date Extracted:	23 Nov 2009
Date Collected:	28 Oct 2009	% Solids:	85.8 %	QC Batch No.:	7350	Date Analyzed:	04 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	18:59:03
<u>Analyte</u>	<u>Conc. (pg/g)</u>	<u>DL (pg/g)</u>	<u>EMPC (pg/g)</u>	<u>Qualifiers</u>	<u>Standard</u>	<u>ES Recoveries</u>	<u>Qualifiers</u>
2,3,7,8-TCDD	2,220	[Ra=0.798]		*	13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-OCDD	87.2 71.6 79.6 81.5 79.2 83.8 84.2	
1,2,3,7,8-PeCDD	87.7						
1,2,3,4,7,8-HxCDD	20.3						
1,2,3,6,7,8-HxCDD	42.5						
1,2,3,7,8,9-HxCDD	26.3						
1,2,3,4,6,7,8-HpCDD	134						
OCDD	2,330						
2,3,7,8-TCDF	19.1				13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,7,8,9-HpCDF 13C-OCDF	84.1 77.8 76.2 86 80.8 83.6 90.2 85.3 81.2 79.8	
1,2,3,7,8-PeCDF	EMPC		3.17				
2,3,4,7,8-PeCDF	10.9						
1,2,3,4,7,8-HxCDF	7.61						
1,2,3,6,7,8-HxCDF	5.34						
2,3,4,6,7,8-HxCDF	51.7						
1,2,3,7,8,9-HxCDF	EMPC		2.29				
1,2,3,4,6,7,8-HpCDF	55.4						
1,2,3,4,7,8,9-HpCDF	4.35						
OCDF	52.3						
<b>Totals</b>						<b>CS Recoveries</b>	
TCDDs	2,370				37Cl-2,3,7,8-TCDD 13C-1,2,3,4,7-PeCDD 13C-1,2,3,4,6-PeCDF 13C-1,2,3,4,6,9-HxCDF 13C-1,2,3,4,6,8,9-HpCDF	98.4 73.8 85.6 89.8 98.9	
PeCDDs	324						
HxCDDs	357		374				
HpCDDs	284						
TCDFs	576		577				
PeCDFs	723		737				
HxCDFs	4,120		4,130				
HpCDFs	107						
<b>Total PCDD/Fs</b>	<b>11,300</b>		<b>11,300</b>			2714 Exchange Drive Wilmington, NC 28405 USA	
<b>ITEF TEQs</b>					 ANALYTICAL PERSPECTIVES		
TEQ: ND=0	2,290		2,290		Tel: +1 910 794-1613; Toll-Free 866 846-8290	info@ultratrace.com	
TEQ: ND=DL/2	2,290		2,290		Fax: +1 910 794-3919	www.ultratrace.com	
TEQ: ND=DL	2,290		2,290				

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14 Dec 09

GIV\_NBC\_0319611

**Sample ID: SB10-8****Method 1613**

<u><b>Client Data</b></u>		<u><b>Sample Data</b></u>		<u><b>Laboratory Data</b></u>			
Name:	Entrix	Matrix:	Solids	Project No.:	P1788	Date Received:	30 Oct 2009
Project ID:	Givaudan	Weight/Volume:	11.60 g	Sample ID:	P1788_7350_011CU	Date Extracted:	23 Nov 2009
Date Collected:	28 Oct 2009	% Solids:	85.6 %	QC Batch No.:	7350	Date Analyzed:	10 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	14:35:08
<b>Analyte</b>	<b>Conc. (pg/g)</b>	<b>DL (pg/g)</b>	<b>EMPC (pg/g)</b>	<b>Qualifiers</b>	<b>Standard</b>	<b>ES Recoveries</b>	<b>Qualifiers</b>
2,3,7,8-TCDD	3,670	[Ra=0.79]		*	13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD	85.3 72.1 90	
1,2,3,7,8-PeCDD	231				13C-1,2,3,6,7,8-HxCDD	88.2	
1,2,3,4,7,8-HxCDD	60.5				13C-1,2,3,7,8,9-HxCDD	91.9	
1,2,3,6,7,8-HxCDD	112				13C-1,2,3,4,6,7,8-HpCDD	92.9	
1,2,3,7,8,9-HxCDD	71.3				13C-OCDD	94.8	
1,2,3,4,6,7,8-HpCDD	245						
OCDD	886						
2,3,7,8-TCDF	172				13C-2,3,7,8-TCDF	83.7	
1,2,3,7,8-PeCDF	4.81				13C-1,2,3,7,8-PeCDF	76	
2,3,4,7,8-PeCDF	19.4				13C-2,3,4,7,8-PeCDF	72	
1,2,3,4,7,8-HxCDF	8.93				13C-1,2,3,4,7,8-HxCDF	90.5	
1,2,3,6,7,8-HxCDF	10.2				13C-1,2,3,6,7,8-HxCDF	84.5	
2,3,4,6,7,8-HxCDF	239				13C-2,3,4,6,7,8-HxCDF	85.3	
1,2,3,7,8,9-HxCDF	EMPC		2.54		13C-1,2,3,7,8,9-HxCDF	122	
1,2,3,4,6,7,8-HpCDF	55.6				13C-1,2,3,4,6,7,8-HpCDF	91.2	
1,2,3,4,7,8,9-HpCDF	4.7				13C-1,2,3,4,7,8,9-HpCDF	88.4	
OCDF	52.6				13C-OCDF	88	
<b>Totals</b>						<b>CS Recoveries</b>	
TCDDs	4,010		4,020		37Cl-2,3,7,8-TCDD 13C-1,2,3,4,7-PeCDD 13C-1,2,3,4,6-PeCDF 13C-1,2,3,4,6,9-HxCDF 13C-1,2,3,4,6,8,9-HpCDF	108 73.5 88.4 104 117	
PeCDDs	786						
HxCDDs	1,010		1,040				
HpCDDs	520						
TCDFs	3,110		3,120			<b>AS Recoveries</b>	
PeCDFs	2,860		2,870			100	
HxCDFs	17,900		17,900			104	
HpCDFs	162						
<b>Total PCDD/Fs</b>	<b>31,300</b>		<b>31,400</b>			2714 Exchange Drive Wilmington, NC 28405 USA	
<b>ITEF TEQs</b>					 ANALYTICAL PERSPECTIVES		
TEQ: ND=0	3,870		3,870		Tel: +1 910 794-1613; Toll-Free 866 846-8290	info@ultratrace.com	
TEQ: ND=DL/2	3,870		3,870		Fax: +1 910 794-3919	www.ultratrace.com	
TEQ: ND=DL	3,870		3,870				

Checkcode: 3178



Tel: +1 910 794-1613; Toll-Free 866 846-8290  
Fax: +1 910 794-3919

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14 Dec 09

GIV\_NBC\_0319612

**Sample ID: SB4-6****Method 1613**

<u>Client Data</u>		<u>Sample Data</u>		<u>Laboratory Data</u>			
Name:	Entrix	Matrix:	Solids	Project No.:	P1788	Date Received:	30 Oct 2009
Project ID:	Givaudan	Weight/Volume:	11.71 g	Sample ID:	P1788_7350_014	Date Extracted:	23 Nov 2009
Date Collected:	28 Oct 2009	% Solids:	85.9 %	QC Batch No.:	7350	Date Analyzed:	04 Dec 2009
		Split:	-	Dilution:	-	Time Analyzed:	20:39:57
<u>Analyte</u>	<u>Conc. (pg/g)</u>	<u>DL (pg/g)</u>	<u>EMPC (pg/g)</u>	<u>Qualifiers</u>	<u>Standard</u>	<u>ES Recoveries</u>	<u>Qualifiers</u>
2,3,7,8-TCDD	2,030	[Ra=0.799]		*	13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,7,8-HpCDD 13C-OCDD	90.5 74.1 80.4 78.4 81.9 83.9 87.9	
1,2,3,7,8-PeCDD	69.8						
1,2,3,4,7,8-HxCDD	13.3						
1,2,3,6,7,8-HxCDD	44.9						
1,2,3,7,8,9-HxCDD	15.1						
1,2,3,4,6,7,8-HpCDD	123						
OCDD	1,790						
2,3,7,8-TCDF	23.7			J	13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF	85.9 80.1 79.6 87.6 84.1 84.4	
1,2,3,7,8-PeCDF	1.97						
2,3,4,7,8-PeCDF	9.86						
1,2,3,4,7,8-HxCDF	6.22						
1,2,3,6,7,8-HxCDF	EMPC		5.36				
2,3,4,6,7,8-HxCDF	87.2			J	13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,7,8,9-HpCDF	89 83.7 83.6	
1,2,3,7,8,9-HxCDF	EMPC		1.59				
1,2,3,4,6,7,8-HpCDF	46						
1,2,3,4,7,8,9-HpCDF	3.21						
OCDF	60.9						
<b>Totals</b>						<b>CS Recoveries</b>	
TCDDs	2,160		2,160		37Cl-2,3,7,8-TCDD 13C-1,2,3,4,7-PeCDD 13C-1,2,3,4,6-PeCDF 13C-1,2,3,4,6,9-HxCDF 13C-1,2,3,4,6,8,9-HpCDF	101 78.4 90 94.7 99.7	
PeCDDs	344						
HxCDDs	356		375				
HpCDDs	260						
TCDFs	810		858				
PeCDFs	1,680		1,690				
HxCDFs	8,710		8,730				
HpCDFs	117						
<b>Total PCDD/Fs</b>	<b>16,300</b>		<b>16,400</b>			2714 Exchange Drive Wilmington, NC 28405 USA	
<b>ITEF TEQs</b>					 ANALYTICAL PERSPECTIVES		
TEQ: ND=0	2,090		2,100		Tel: +1 910 794-1613; Toll-Free 866 846-8290	info@ultratrace.com	
TEQ: ND=DL/2	2,090		2,100		Fax: +1 910 794-3919	www.ultratrace.com	
TEQ: ND=DL	2,090		2,100				

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14 Dec 09KAM  
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